SLV-315/CP/EI/UB/VP
RMT-V103/V104A

SERVICE MANUAL

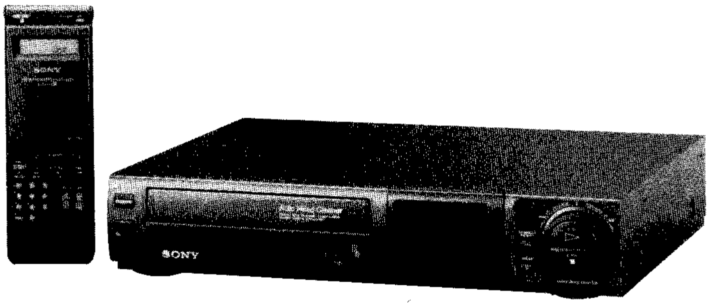
AEP Model
SLV-315

UK Model
SLV-315UB

Germany Model
SLV-315VP

Spanish Model
SLV-315CP

Irish Model
SLV-315EI



VHS Hi-Fi

SPECIFICATIONS

System

Channel coverage	SLV-315/315VP
	VHF channels E2 - E12
	(A to H only for Italy)
	CATV channels S01 - S03
	CATV channels S1 - S20
	HYPER S21 - S41
	UHF channels E21 - E69
	SLV-315UB
	UHF channels B21 - B68
	SLV-315EI
	VHF channels A - J
	CATV channels S01 - S03
	CATV channels S1 - S20
	HYPER S21 - S41
	UHF channels E21 - E69
	SLV-315CP
	VHF channels E2 - E12
	CATV channels S01 - S03
	CATV channels S1 - S20
	HYPER S21 - S41
	UHF channels E21 - E69

Inputs and outputs

Video input	EURO-AV: 21-pin (pin 20)
Video output	EURO-AV: 21-pin (pin 19)
Audio input	EURO-AV: 21-pin (pins 2 and 6)
Audio output	EURO-AV: 21-pin (pins 1 and 3)

General

Power requirements	240 V AC, 50 Hz (SLV-315UB) 220 V AC, 50 Hz (SLV-315/315VP/315EI/315CP)
Power consumption	25 W
Operating temperature	5°C to 40°C (41°F to 104°F)
Storage temperature	–20°C to 60°C (–4°F to 140°F)
Dimensions	430 x 87 x 358 mm (w/h/d) (17 x 3 1/2 x 14 1/8 inches) (Including projecting parts and controls)
Weight	5.7 kg (12 lb 9 oz)

Accessories supplied

Wireless Remote Commander RMT-V103 with two R6 batteries (1) (EXCEPT SLV-315CP)
Wireless Remote Commander RMT-V104A with two R6 batteries (1) (SLV-315CP)
75-ohm coaxial cable (1)
AC power cord (1)

Design and specifications are subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

MICROFILM

VIDEO CASSETTE RECORDER

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT A LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DES SUPPLÉMENTS PUBLIÉS PAR SONY.

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SECTION 1
GENERAL

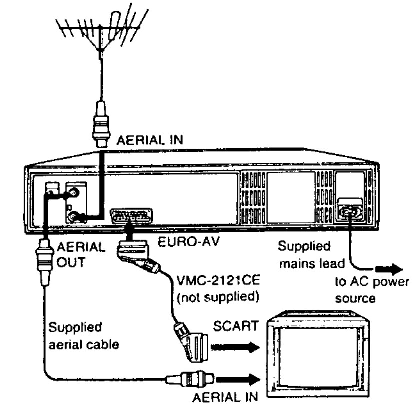
This section is extracted from instruction manual.

Connections

Turn all the power off before making connections.
Connect the mains lead last.

Connecting an Aerial and a TV

Whenever you view video pictures as well as TV programmes on your TV screen, connect an aerial and a TV as shown.


AERIAL IN
AERIAL OUT
EURO-AV
Supplied mains lead
to AC power source
VMC-2121CE (not supplied)
Supplied aerial cable
SCART
AERIAL IN

1. Disconnect the aerial from the aerial input terminal of the TV, and connect the aerial to the AERIAL IN of this VTR.
2. Connect the AERIAL OUT of this VTR to the aerial input terminal of the TV, using the supplied aerial cable.

Note:
Connect the plug firmly to avoid picture distortion.

When your TV is equipped with a 21-pin SCART connector

In addition to the aerial connection, connect the EURO-AV connector of the VTR to the SCART connector of the TV, using the VMC-2121CE cable (not supplied). In this way, you can get a higher quality picture.

Preparing the Remote Commander

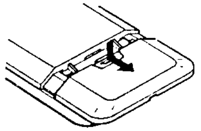
Before using the supplied Remote Commander, insert the correct batteries into the Commander.

How to use the Remote Commander

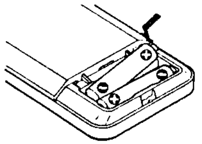
When you operate the VTR using the Commander, first set the TV/VTR selector on the Commander to VTR, then point it to the remote sensor of the VTR. For the location of the remote sensor, see "Labeling Parts and Controls" on page 27.

Inserting Batteries

1. Slide and remove the cover.



2. Insert two R6 (size AA) batteries with the polarity positioned correctly.

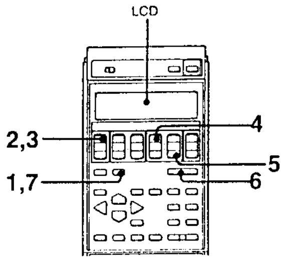


3. Close the cover.

Note on batteries
With normal operation, batteries will last for about six months. If the Commander will not be used for a long period of time, however, remove the batteries to avoid possible damage from battery leakage.

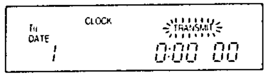
Setting Date and Clock

Set the clock to the current time and date on the Remote Commander and then transmit it to the VTR.
You can set the time and date between the years 1991 and 2005.

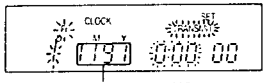

LCD
2,3
1,7
4
5
6

Example:
Sets the date and clock to 15:30, Wednesday, November 27, 1991.
Be certain that the + side of the keys, used in the following procedure, increments the number and the – side decrements it.

1. Press CLOCK SET.

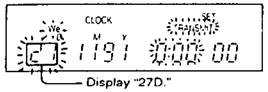

CLOCK
DATE
TRANSMIT
0:00 00

2. Keep pressing the D(date) button until "11 M 91 Y" appears on the LCD.
   The date will be incremented slowly up to 30 days ahead and then the month will be incremented.


CLOCK
SET
TRANSMIT
11 91
0:00 00

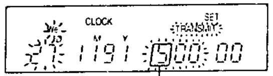
Display "11M91Y."

3. Press + or – of the D(date) button until "27D" appears.
   The day of the week is adjusted automatically.


We
CLOCK
SET
TRANSMIT
27 11 91
0:00 00

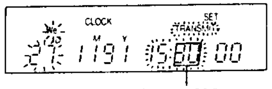
Display "27D."

4. Press the H(hour) button in the TURN OFF section to set the hour.


CLOCK
SET
TRANSMIT
27 11 91
15:00 00

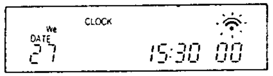
Display "15"

5. Press M(minute) button in the TURN OFF section to set the minute.

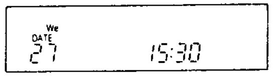

CLOCK
SET
TRANSMIT
27 11 91
15:30 00

Display "30."

6. Point the Commander at the remote sensor of the VTR and press TRANSMIT within 5 seconds.
   A beep sounds showing that the date and clock setting is registered in the VTR as well.


We
DATE
CLOCK
27
15:30 00

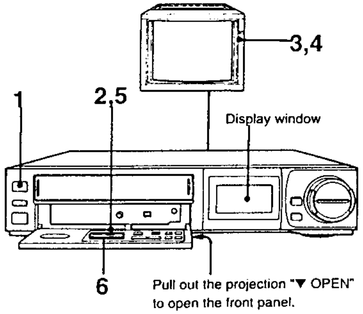
7. Confirm that the correct date and time appear on the display window of the VTR, and then press CLOCK SET.


We
DATE
27
15:30

When a short beep sounds repeatedly
You cannot transmit the clock setting to the VTR. Check to see if the VTR is currently in the timer-activated recording, quick timer recording, or standby for timer-activated recording.

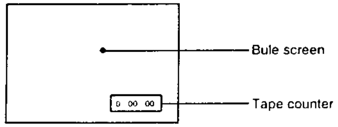
Adjusting the TV

If you have connected your VTR and TV using only the aerial sockets, you have to adjust one of the television programme positions to receive the VTR's playback signals. If the TV-VTR connection is made using the EURO-AV socket, skip this procedure.

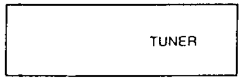

3,4
1
2,5
Display window
6

Pull out the projection "▼ OPEN" to open the front panel.

1. Press ⏻ (ON/STANDBY) to turn on the VTR.
2. Press INPUT SELECT to light LINE in the display window.
3. Turn on the TV and select a programme position that is not used to receive a TV station.
4. Tune the TV so that a blue screen with the tape counter indication is clearly displayed on the TV screen.


Bule screen
0 00 00
Tape counter

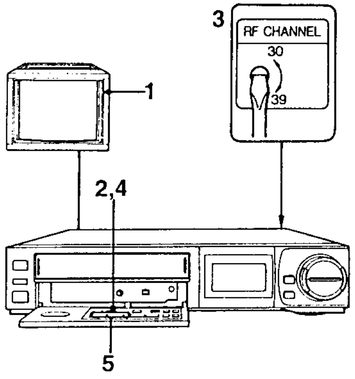
5. Press INPUT SELECT to light TUNER in the display window.



6. Press PROGRAM +/– to check to see if the TV screen changes to a different programme.

Now you have tuned your TV to receive the VTR's playback picture. When you play back a tape, select the same programme position you chose in step 3.

When the playback picture is not free of disturbance
Readjust the programme position for the VTR.


3
RF CHANNEL
30
39
1
2,4
5

1. Select a programme position on the TV between UHF channels 30 and 39, where the TV shows no picture and a steady rustling sound or where no sound is heard.
2. Press INPUT SELECT to light LINE in the display window.
3. Turn the RF CHANNEL screw with a commercially available screwdriver to the position where the TV clearly displays a blue screen with tape counter.
4. Press INPUT SELECT to light TUNER in the display window.
5. Press PROGRAM +/– to check to see if the TV screen changes to a different programme.

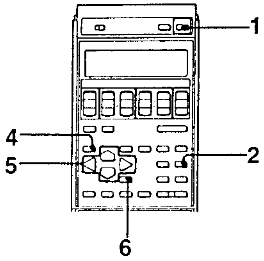
If the TV signal is too strong
Set the LOCAL/DX switch, on the rear panel of the VTR, to LOCAL with a commercially available screwdriver. Normally set this switch to DX.

Presetting the Active Channels

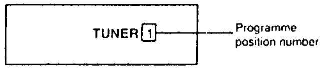
To be continued ➤

To watch and record a TV programme on the VTR, you have to preset channels. For presetting channels, call up the menu on the TV screen, then allocate the channels in your desired order.

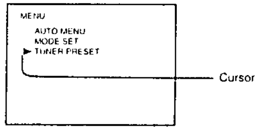
Calling up the TUNER PRESET Menu



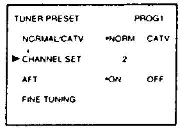
1. Press ⏻ to turn on the VTR.
2. Press INPUT SELECT so that the TUNER indicator lights and the programme position number appears in the display window of the VTR.


TUNER 1
Programme position number

3. Turn on the TV. If you have made a VTR-TV connection using the aerial sockets, select the programme position for video playback (see page 6).
4. Press MENU.
   The main MENU appears on the TV screen.
5. Press ▲ or ▼ to move the cursor (▶ mark) to TUNER PRESET.


MENU
AUTO MENU
MODE SET
▶ TUNER PRESET
Cursor

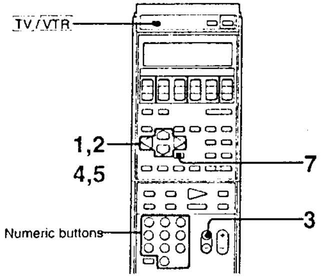
6. Press EXECUTE.
   The TUNER PRESET menu appears.


TUNER PRESET PROG1
NORMAL/CATV •NORM CATV
▶ CHANNEL SET 2
AFT •ON OFF
FINE TUNING

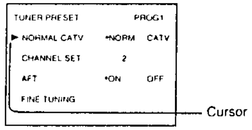
Note for SLV-315UB users:
The NORMAL/CATV selection does not appear on the TUNER PRESET menu.

Allocating Desired Channels

Tune a desired TV channel to any desired programme position.
You can allocate channels to programme positions 1 to 60.

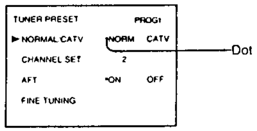

TV/VTR
1,2
4,5
7
Numeric buttons
3

1. Press ▲ or ▼ to move the cursor (▶ mark) to NORMAL/CATV.
   (If you are operating the SLV-315UB model, skip this step.)

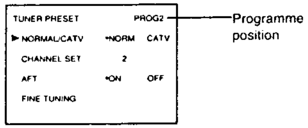

TUNER PRESET PROG1
▶ NORMAL CATV •NORM CATV
CHANNEL SET 2
AFT •ON OFF
FINE TUNING
Cursor

Presetting the Active Channels

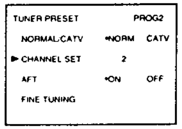
2. Press ◀ or ▶ to move the dot (● mark) to NORM.
To tune in CATV channels first, select CATV.
If you are operating the SLV-315UB model, also skip this step.


TUNER PRESET
PROG1
▶NORMAL CATV
NORM CATV
CHANNEL SET
2
AFT
•ON OFF
FINE TUNING
Dot

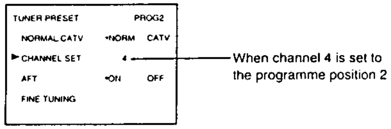
3. Press PROG +/– (or PROGRAM +/– on the VTR) to select the desired programme position.


TUNER PRESET
PROG2
▶NORMAL/CATV
•NORM CATV
CHANNEL SET
2
AFT
•ON OFF
FINE TUNING
Programme position

4. Press ▲ or ▼ to move the cursor to CHANNEL SET.


TUNER PRESET
PROG2
NORMAL/CATV
•NORM CATV
▶CHANNEL SET
2
AFT
•ON OFF
FINE TUNING

5. Press ▶ (or ◀) to scan the channel.
Press ▶ for higher channel numbers, and press ◀ for lower channel numbers.
When the first channel is scanned, the channel number stops changing, the picture of that channel appears for about 5 seconds, and then the blue screen reappears.
To skip the channel, press EXECUTE before the blue screen appears, then the next channel will be scanned.


TUNER PRESET
PROG2
NORMAL CATV
•NORM CATV
▶CHANNEL SET
4
AFT
•ON OFF
FINE TUNING
When channel 4 is set to the programme position 2

To allocate the channels directly
Enter two-digit numbers using the numeric buttons, instead of pressing ▶ (or ◀).
Example: To enter 2, press 0, and then 2.

Channel scanning order on your VTR
The scanning order when you press ▶ is as follows.
(The scanning order is reversed when you press ◀ .)

→VHF(E2-E12)→UHF(E21-E69)→CATV(S1-S20)
CATV (S01-S03)←HYPER BAND (S21- S41)←

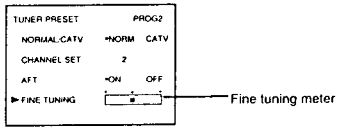
- The SLV-315UB only scans UHF B21 to B68.
- In Italy, channel numbers 13 to 20 correspond to channels A to H.

6. Repeat the above steps to allocate other channels to the next programme position.

7. Press EXECUTE to store all the allocations.
The original TV screen appears.

When you cannot get fine tuning

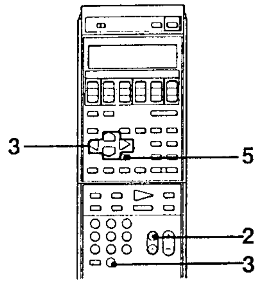
1. Press PROG +/– (PROGRAM +/–) to call up the programme position of the weak channel.
2. Call up the TUNER PRESET menu on the TV screen. (See "Calling Up the TUNER PRESET Menu.")
3. Press ▲ or ▼ to move the cursor to FINE TUNING.


TUNER PRESET
PROG2
NORMAL CATV
•NORM CATV
CHANNEL SET
2
AFT
•ON OFF
▶FINE TUNING
Fine tuning meter

4. Press ◀ or ▶ until you can get the best picture.
5. Press EXECUTE to store the programme position.

Erasing Unwanted Programme Position

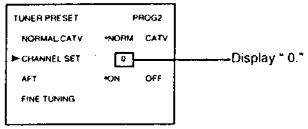
You can preset the channels so that only the desired programme positions appear when you press PROG +/– (or PROGRAM +/– on the VTR).



1. Call up the TUNER PRESET menu on the TV screen. (See "Calling Up the TUNER PRESET Menu.")

2. Press PROG +/– (or PROGRAM +/– on the VTR) to call up the unwanted programme position.

3. Press 0 twice, or keep pressing ◀ or ▶ until 0 appears on the CHANNEL SET position.


TUNER PRESET
PROG2
NORMAL CATV
•NORM CATV
▶CHANNEL SET
0
AFT
•ON OFF
FINE TUNING
Display " 0."

4. Repeat the above steps 2 and 3 to erase others, if you want.

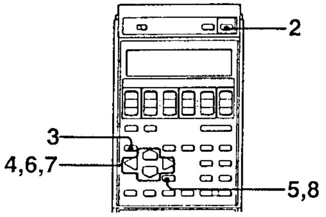
5. Press EXECUTE.
The original TV screen appears.

Changing the Mode Setting

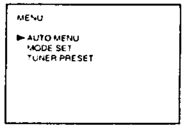
You can use the MODE SET menu to adjust the status of the VTR to your preference. There are four selections in the menu, including TIMER REC–REW ON/OFF, BUZZER ON/OFF, DIMMER ON/OFF, BACK COLOUR BL/GR/PK. For the TIMER REC–REW ON/OFF and BUZZER ON/OFF selections, refer to "Timer-Activated Recording."
The DIMMER ON/OFF selection is to make the brightness of the display window become darker (DIMMER ON) or lighter (DIMMER OFF). As for the BACK COLOUR BL/GR/PK selection, you can change the back colour of the TV screen.

Dimming out the indications on the display window (DIMMER)

Example:
Makes the display window darker (DIMMER ON).



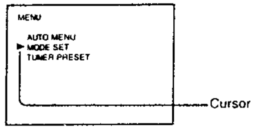
1. Turn on the TV. If you have made a VTR-TV connection using the aerial sockets, select the programme position for video playback.
   If you have made it using the EURO-AV connector, press TV/VTR so that the VTR indicator appears in the display window.
2. Press ⏻ to turn on the VTR.
3. Press MENU. The main MENU appears on the TV screen.



```
MENU

▶ AUTO MENU
  MODE SET
  TUNER PRESET
```

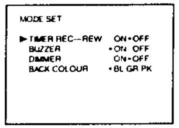
4. Press ▲ or ▼ to move the cursor (▶ mark) to MODE SET.



```
MENU

  AUTO MENU
▶ MODE SET
  TUNER PRESET
```

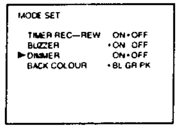
5. Press EXECUTE.
   The MODE SET menu appears on the screen.



```
MODE SET

▶ TIMER REC—REW   ON•OFF
  BUZZER         •ON  OFF
  DIMMER          ON•OFF
  BACK COLOUR    •BL GR PK
```

6. Press ▲ or ▼ to move the cursor to DIMMER.



```
MODE SET

  TIMER REC—REW   ON•OFF
  BUZZER         •ON  OFF
▶ DIMMER          ON•OFF
  BACK COLOUR    •BL GR PK
```

7. Press ◀ or ▶ to move the dot (● mark) to ON.
   To make the display window lighter again, select OFF.
8. Press EXECUTE.
   The display window has now been changed to be darker. The original TV screen appears. The setting is effective as long as the VTR is connected to the AC power source.

Selecting the back colour (BACK COLOUR)

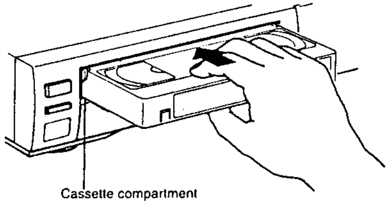
Follow the same procedure as the DIMMER selection, except that you move the cursor to BACK COLOUR in step 6 and then to your favorite colour, BL (blue), GR (green), or PK (pink) in step 7.

Playback

To be continued ▶

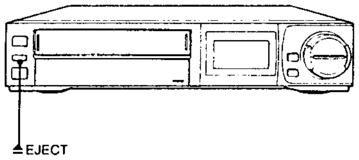
This section shows you how to insert a video cassette into the VTR and to play it back.

Loading a Video Cassette



Insert the cassette into the cassette compartment by slowly pressing its center with the arrow on the top.
When the cassette is loaded, the VTR automatically turns on.
If the loaded cassette has its safety tab removed (see "Protecting your cassette from being erased"), the playback starts automatically.

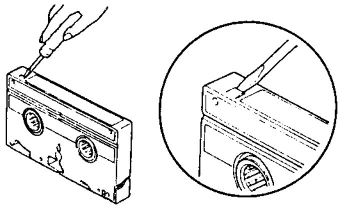
Ejecting the video cassette



Press ≜ EJECT on the VTR.
You can eject the cassette even when the power is off.
When you press ≜ EJECT, the VTR turns on automatically.
After ejecting the cassette, the VTR turns off again.

Protecting your cassette from being erased

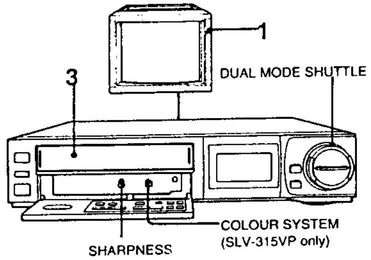
The cassette is provided with a safety tab to protect against an accidental recording. Remove the tab with a screwdriver or a similar tool as shown.

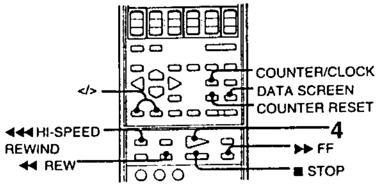


If you want to record again on the cassette without its safety tab, simply cover the safety tab hole with a piece of plastic tape.

Playing Back the Cassette

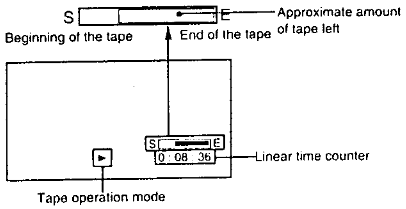
Before playing back the cassette, check that all the connections are made correctly.





1. Turn on the TV. If you have made a VTR-TV connection using the aerial sockets, select the programme position for video playback.
   If you have made it using the EURO-AV connector, press TV/VTR so that the VTR indicator appears in the display window.
2. **For the SLV-315VP models**
   Normally set COLOUR SYSTEM to PAL.
   To play back a tape recorded using the MESECAM colour system, set COLOUR SYSTEM to MESECOM.
3. Insert the cassette.
   The VTR turns on automatically. If the safety tab of the cassette is removed, playback also starts automatically.
4. Press ▶ PLAY.
   Playback starts.
   When it reaches to the end, the VTR automatically rewinds the tape to the beginning (auto rewind). The power of the unit remains on.

The following information (data screen) appears on the TV screen.



To erase the data screen information or to display it again
Press DATA SCREEN on the Commander.

Notes on the remaining tape length indicator
- The remaining tape length indicator only shows the approximate amount of tape left.
- The indication may shift vertically in the fast-forward or rewind mode.
- It may not operate properly when a short tape, such as the E-30 and VHS-C type cassette, or non-standardized tape is loaded.

To stop playback
Press ■ STOP.

To play back in the reverse direction
Press < on the Commander during playback. The picture will be played back in reverse.
If you want to play back in the forward direction again, press ▶ PLAY or >.

To rapidly advance the tape
Press ■ STOP, then turn the DUAL MODE SHUTTLE ring on the VTR clockwise (▶▶). You can also use ▶▶ FF on the Commander.

To rewind the tape
Press ■ STOP, then turn the DUAL MODE SHUTTLE ring on the VTR counterclockwise (◀◀). You can also use ◀◀ REW on the Commander.
To rewind the tape at higher speed, press ◀◀◀ HI-SPEED REWIND.

To adjust the sharpness of the picture
Turn the SHARPNESS control on the VTR to SHARP for a sharper picture or to SOFT for a softer picture.

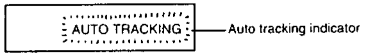
Resetting the tape counter

The tape counter in the display window helps you to locate a certain scene after playback. Press COUNTER RESET on the Commander to set the counter to the "0H00M00S" (counter zero) position before playing back the tape (the tape counter is automatically reset to zero whenever a cassette is inserted). The VTR will keep counting the length of the tape being played back.
Note, however, that the tape counter will not count the portions without video signals recorded.

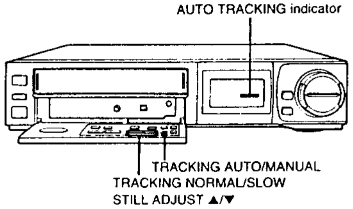
Note
If the display window shows the current clock, not the tape counter, press CLOCK/COUNTER on the Commander to switch the display to tape counter.

Adjusting Pictures Manually

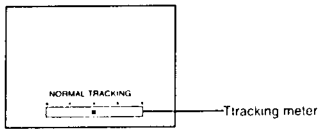
Normally you can get the optimum tracking condition since the auto tracking function activates whenever you load a prerecorded cassette.
The auto tracking function works as follows:
While the VTR is searching for the best tracking condition, the AUTO TRACKING indicator is blinking.



When the VTR has obtained the best possible tracking condition, the AUTO TRACKING indicator lights up.
However, if streaks or snow noise appear on the picture, adjust the tracking condition as follows:



Press TRACKING NORMAL/SLOW and STILL ADJUST ▲/▼ to obtain the best possible picture.
The tracking meter appears on the TV screen and the AUTO TRACKING indicator goes off.



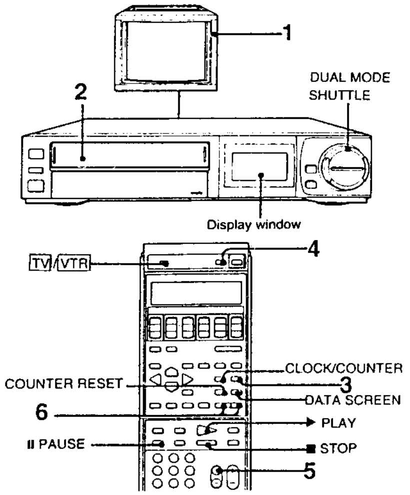
To return to the auto tracking adjustment
Press TRACKING AUTO/MANUAL.

Notes on manual tracking adjustment
- When the manual adjustment proves unsatisfactory, press both of TRACKING NORMAL/SLOW and STILL ADJUST.
  The tracking condition returns to the center position.
- Tracking adjustment may not be possible when the recording condition of the tape is very poor.

Recording

This section shows you how to record TV programmes. You can also watch a TV programme on the TV screen while recording another.
Before recording, check to see that all the connections have been made correctly.

Recording TV Programmes



1. Turn on the TV. If you have made a VTR-TV connection using the aerial sockets, select the programme position for video playback.
2. Insert a cassette.
   The VTR automatically turns on.
3. Press INPUT SELECT to light TUNER in the display window of the VTR.
4. Press TV/VTR to light VTR in the display window.
   Skip this step when the VTR-TV connection is made using only the aerial sockets.
5. Press PROG +/– (or PROGRAM +/– on the VTR) to select the programme position you want to record.
6. Press the button at right while pressing ● REC.
   Recording starts.
   You can also start recording by pressing the ● REC button on the VTR.
   When the VTR reaches the end, it automatically rewinds the tape.

The information (data screen) appears on the TV screen.

To erase the data screen information or to display it again
Press DATA SCREEN on the Commander.

Note on data screen
Data screen information will not be recorded on the tape.

Notes on the remaining tape length indicator
- The remaining tape length indicator only shows the approximate amount of tape left.
- It may not operate properly when a short tape, such as the E-30 and VHS-C type cassette, or non-standardized tape is loaded.

To stop recording
Press ■ STOP.

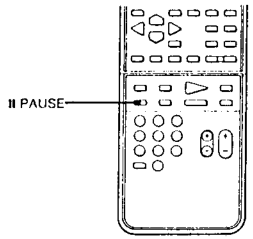
If you want to operate the TV using the Commander
Set the TV/VTR selector to TV. You can select the TV channel with PROG +/– and adjust the volume with VOL +/–.

Resetting the tape counter

The tape counter in the display window helps you to locate a certain scene after recording. Press COUNTER RESET on the Commander to set the counter to the "0H00M00S" (counter zero) position before recording the tape (the tape counter is automatically reset to zero whenever a cassette is inserted). The VTR will keep counting the length of the tape being recorded.
Note, however, that the tape counter will not count the portions without video signals recorded.

Note
If the display window shows the current clock, not the tape counter, press CLOCK/COUNTER on the Commander to switch the display to tape counter.

Cutting Out the Unwanted Scene



To stop recording momentarily at the unwanted scene
You can perform the following operation with the Commander.

1. Press II PAUSE when an unwanted scene appears on the screen.
   Recording pauses.
2. Press II PAUSE again to resume recording at the desired scene.

Watching a TV Programme while Recording Another

The method differs depending on how the VTR is connected to the TV.

If the VTR is connected to the TV using the EURO-AV sockets

1. Press TV/VTR to turn off the VTR indicator in the display window on the VTR.
2. Select the programme position of the TV programme desired on the TV.
   The selected programme appears on the screen.

If the VTR is connected to the TV using only the aerial sockets

Select the programme position of the TV programme desired on the TV.

Timer-Activated Recording

To be continued ▶

You can preset up to eight TV programmes within one month (between today and one day before the same day in the next month).
This section shows you how to preset, on the timer of the VTR, the recording turn-on and turn-off time for the TV programmes to be recorded. You can also check and change the timer settings if you want.

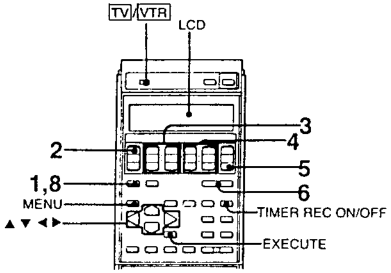
Setting the Timer

Set the timer using the buttons on the Commander while referring to the indications on its LCD.

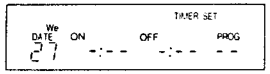
To assure your programming, check the followings before setting the timer:

- You have turned on the TV and selected the programme position for video playback (see "Adjusting the TV").
- The clocks on the Commander and on the VTR show the present time (see "Setting Date and Clock").
- The cassette with its safety tab is loaded in the VTR.
- If you are operating the SLV-315VP model, first read "Using the Video Programme System (VPS) Function" on page 21.

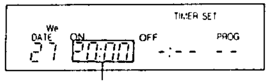
Example:
Records the TV programme broadcast from 20:00 to 20:50 on Wednesday, 27th November, 1991, on programme position 8.



1. Press TIMER SET.
2. Press D (date) until 27 appears.
   The day of the week, We (Wednesday), is automatically set.

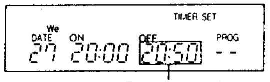


3. Press TURN ON H (hour) and M (minute) until the recording start time appears.



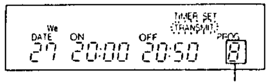
Recording start time

4. Press TURN OFF H (hour) and M (minute) until the recording end time appears.



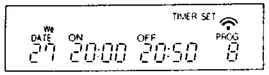
Recording end time

5. Press PROG +/– (or PROGRAM +/– on the VTR) to select the desired programme position.
   The TRANSMIT indicator blinks showing that all the necessary items are entered.



Programme position

6. Point the Commander to the remote sensor of the VTR and press TRANSMIT.
   With a beep sound, the VTR enters the timer recording standby mode. The PROGRAMME LIST appears on the TV screen for a few seconds.



7. Repeat steps 1 to 6 for presetting other TV programmes, if you want.
8. Press TIMER SET.
   The present time appears on the LCD.
   The VTR automatically turns on, starts recording at the selected time, and turns off after recording ends.

To stop timer recording
Press TIMER REC ON/OFF.

If a short beep sounds repeatedly when you press TRANSMIT
When the BUZZER is set to ON in the MODE SET menu, the short beep indicates that the VTR cannot receive the command transmitted from the Commander. Press TRANSMIT repeatedly, and if the beep sound persists, check the followings:

- No cassette is inserted.
- You have made an illogical operation on the Commander.
- You have attempted to transmit data except when the VTR is turned off, or it is in the stop or timer recording mode.
- You have already made eight timer settings.
- The tape is at its end.

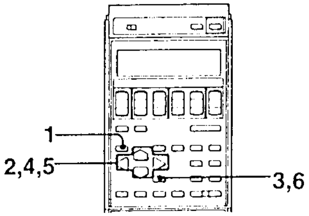
If the tape is ejected after pressing TRANSMIT
The safety tab of the inserted cassette has been removed (see page 11).

To use the VTR before timer-activated recording starts
Press TIMER REC ON/OFF, then turn on the power of the VTR. After using the VTR, be sure to press TIMER REC ON/OFF again.

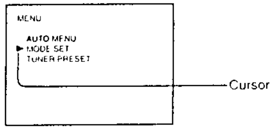
If the power is interrupted while in the timer recording standby/timer recording mode for more than one hour
In the recording standby mode, timer settings are cleared. Reset the settings from the beginning.
In the timer recording mode, the recording stops and the VTR turns off.
If the power interruption lasts for less than one hour, the VTR returns to the original mode when the power is recovered.

Warning buzzer

You can turn on or off the warning buzzer that is given when you press invalid keys on the Commander.



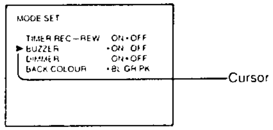
1. Press MENU. The main MENU appears on the TV screen.
2. Press ▲ or ▼ to move the cursor (▶ mark) to MODE SET.



MENU

AUTO MENU
▶ MODE SET
TUNER PRESET

3. Press EXECUTE.
   The MODE SET menu appears.
4. Press ▲ or ▼ to move the cursor to BUZZER.



MODE SET

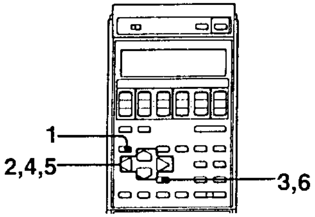
TIMER REC – REW ON • OFF
▶ BUZZER • ON OFF
DIMMER ON • OFF
BACK COLOUR • BL GR PK

5. Press ◀ or ▶ to move the dot (● mark) to ON or OFF.
   ON: Turns on the buzzer.
   OFF: Turns off the buzzer.
6. Press EXECUTE.
   The original screen appears.

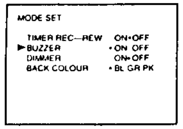
To be continued ►

Automatically rewinding the tape after timer recording

Use the TIMER REC-REW function of the MODE SET menu as shown.



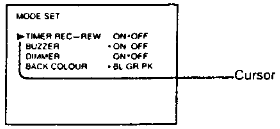
1. Before setting the timer, press MENU while in the stop mode. The main MENU appears on the TV screen.
2. Press ▲ or ▼ to move the cursor (► mark) to MODE SET.
3. Press EXECUTE.
   The MODE SET menu appears.



```
MODE SET

  TIMER REC—REW   ON•OFF
►BUZZER          •ON OFF
  DIMMER          ON•OFF
  BACK COLOUR    •BL GR PK
```

4. Press ▲ or ▼ to move the cursor to TIMER REC-REW.



```
MODE SET

►TIMER REC—REW   ON•OFF
  BUZZER         •ON OFF
  DIMMER          ON•OFF
  BACK COLOUR    •BL GR PK
```

5. Press ◄ or ► to move the dot (● mark) to ON.
   Now you have assigned the TIMER REC - REW function. To turn off the function, move the indication to OFF.
6. Press EXECUTE.
   The setting has been stored, and the original screen appears.

Daily/weekly recording

You can preset to record the same programme each day of the week (daily recording) or the same programme on a specific day of every week (weekly recording).
Press D until your desired indication appears in step 2 of "Setting the Timer." Pressing the – side change the indication in the following order.

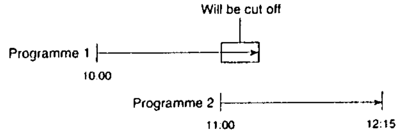
Day setting	LCD display
Every day	EVERY Su Mo Tu We Th Fr Sa
Every day except Sunday	EVERY Mo Tu We Th Fr Sa
Every day except Saturday and Sunday	EVERY Mo Tu We Th Fr
Every Saturday	EVERY Sa
Every Friday	EVERY Fr
Every Sunday	EVERY Su

When your desired daily/weekly recording programme is set and transmitted to the VTR, the corresponding indicator lights in the display window.

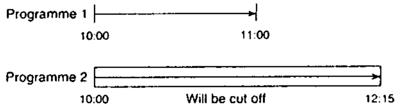
When the timer settings overlap or coincide

According to how the programmes overlap, one of the programmes will be cut off.

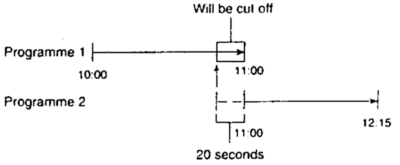
- **If the settings of two programmes overlap**
  The recording of the following programme will begin automatically before the preceding programme ends as shown.



- **If the turn-on time of two programmes are the same**
  The VTR will record the programme with the smaller programme number or the one listed first on the programme list. The programme with the larger programme number or the one listed lower in the list will not be recorded.

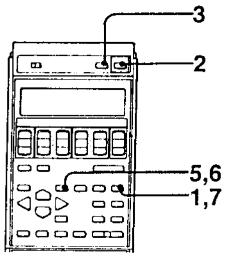


- **If the recording end time of programme 1 and the recording start time of programme 2 are the same**
  The last 20 seconds of programme 1 will not be recorded because the VTR enters the recording pause mode for programme 2 before programme 1 ends.



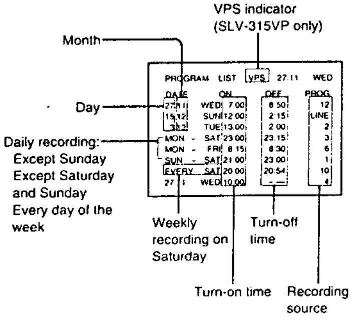
Checking the Timer Settings

You can check the current timer settings, while in the timer standby mode, by displaying the programme list on the screen.



1. Press TIMER REC ON/OFF to turn off the TIMER indicator in the display window of the VTR.
2. Turn on the VTR.
3. Press TV/VTR to light the VTR indicator in the display window.
   Skip this step when the VTR-TV connection is made using only the aerial sockets.
4. Turn on the TV. If you have made a VTR-TV connection using the aerial sockets, select the programme position for video playback. Skip this step if you have made it using the EURO-AV connector.
5. Press TIMER ON SCREEN.
   The programme list appears. (See next page.)
   You can now check the contents of the current timer settings.

Programme list on your TV screen



```
PROGRAM  LIST  VPS  27.11   WED
DATE          ON      OFF   PROG
27.11   WED  7.00    8.50     12
15.12   SUN 12.00    2.15   LINE
 3.12   TUE 13.00    2.00      2
MON  -  SAT 23.00   23.15      3
MON  -  FRI  8.15    8.30      6
SUN  -  SAT 21.00   23.00      1
EVERY   SAT 20.00   20.54     10
27.11   WED 10.00    - -       4
```

6. Press TIMER ON SCREEN again.
   The original screen appears.

7. Press TIMER REC ON/OFF.
   The VTR re-enters the timer recording standby mode.

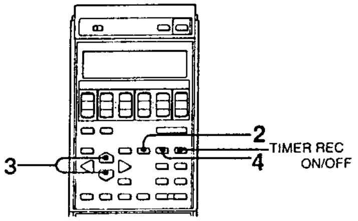
Checking on the display window

You can also check the timer settings on the display window of the VTR. However you can only see the start time and programme position number of one setting at a time.

Changing the Timer Settings

Using the programme list

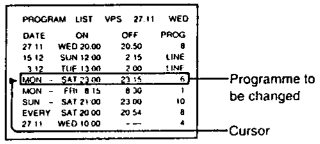
You can clear or change the timer settings while checking the programme list on the screen.



1. Display the programme list on the TV screen (see steps 1 to 5 of "Checking the Timer Settings").

2. Press TIMER REC CHECK to display the the cursor (▶ mark).

3. Move the cursor to the setting you want to change or erase.



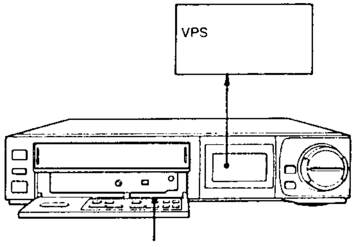
```
PROGRAM  LIST  VPS  27.11   WED
DATE          ON      OFF   PROG
27 11   WED 20.00   20.50      8
15 12   SUN 12 00    2 15   LINE
 3 12   TUE 13 00    2 00   LINE
MON  -  SAT 23 00   23 15      6
MON  -  FRI  8 15    8 30      1
SUN  -  SAT 21 00   23 00     10
EVERY   SAT 20 00   20 54      8
27 11   WED 10 00    - -       4
```

4. To clear the setting, press TIMER REC CLEAR.
   If there are other timer settings left on the list, press TIMER REC ON/OFF to return to the timer recording standby mode.
   To change the setting, re-enter all the necessary items using the Commander (see steps 1 to 6 of the "Setting the Timer".)

   The VTR automatically enters the timer recording standby mode.

Using the Video Programme System (VPS) Function

Note that the VPS function is provided for the SLV-315VP models only.
The German broadcasting system transmits VPS signals with the TV programmes. This assures timer recordings without missing any portion, regardless of being early, of any time delay, extension, or broadcast interruption which might occur during the programme. Before recording with the VPS function, make certain that the VPS signal is transmitted with the programme you want to record.



1. Press VPS ON/OFF to light the VPS indicator in the display window of the main unit.

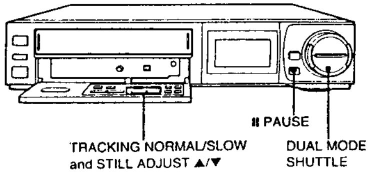
2. Set the timer while referring to "Setting the Timer."

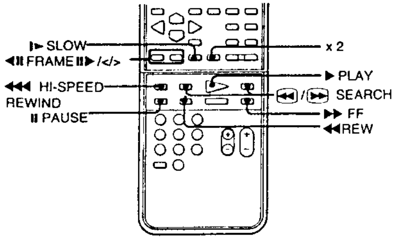
Notes on the VPS function
- When the VTR is on standby for VPS programme, programme position numbers set for timer-activated recording appear in the display window sequentially at intervals of several seconds.
- The ON/STANDBY indicator on the VTR may keep lighting even when the VTR is in the VPS timer standby mode.
- The VPS button is effective only when the TIMER REC indicator is turned off in the display window.
- If the VTR cannot receive the VPS signal because it is too weak or because the station failed to use it to transmit, it records the programme without the VPS function regardless of the VPS indication in the display window.
- The recording will stop when the VTR receives a VPS programme interruption code during recording, for example, when an urgent news bulletin was inserted. As soon as the interrupted programme resumes, however, recording will continue.

If the recording times overlap due to the VPS signal shift
The programme that was broadcast first always has priority. The recording of the second programme will begin only after the first programme is over.

Variable Speed Playback

You can play back the picture at various speeds: a still; 1/5th times the normal speed; the normal speed; 2 times the normal speed, and a higher speed playback, in both forward and reverse directions. You can enjoy the variable speed playback either by using the Commander or the DUAL MODE SHUTTLE ring on the VTR.





Still picture

During playback, press **II** PAUSE.
To resume normal playback, press ▶ PLAY or **II** PAUSE.
When the pause mode lasts for more than approximately 5 minutes, the VTR will automatically re-enter the normal playback mode.

If bands appear on the top or bottom of the screen while in the still mode
Change to the slow-motion play mode and adjust the picture with TRACKING NORMAL/SLOW and STILL ADJUST ▲/▼.

If the picture is shaking while in the still mode
Adjust the picture with TRACKING NORMAL/SLOW and STILL ADJUST ▲/▼.

Picture search

During playback, keep pressing ◀◀ REW (reverse direction) or ▶▶ FF (forward direction). A high-speed picture without sound appears on the TV screen.
To resume normal playback, release the button at a desired scene.

Locked picture search

During playback, press [◀◀] SEARCH (reverse direction) or [▶▶] SEARCH (forward direction). A high-speed picture appears on the screen even when you release the button.
To resume normal playback, press ▶ PLAY.

Slow-motion picture

During playback or in the still mode, press I▶ SLOW (forward direction). To play back in reverse direction, press < and then press I▶ SLOW.

If streaks or noise bands appear during forward slow-motion playback
Adjust the picture with TRACKING NORMAL/SLOW and STILL ADJUST ▲/▼.

2 times the normal speed picture

During playback or in the still mode, press x 2 (forward direction). To play back in the reverse direction, press < and then press x 2.

Frame-by-frame picture

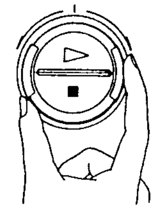
In the still mode, press ◀II FRAME to reverse the picture one frame. Press FRAME II▶ to advance the picture one frame.
To resume normal playback, press ▶ PLAY.

Watching the picture momentarily during the fast-forward or rewind

During fast-forward, turn the DUAL MODE SHUTTLE ring clockwise to [▶▶] or press ▶▶ FF on the Commander.
During rewind, turn the DUAL MODE SHUTTLE ring counterclockwise to [◀◀] or press ◀◀ REW on the Commander. You can see the high-speed playback picture as long as you hold the ring in that position or if you press the button.
To return to the previous mode, release the ring or button.

Playing back at various speeds by turning the ring

You can also enjoy the variable speed playback using the DUAL MODE SHUTTLE ring on the VTR.
Press ▶ PLAY (the upper half of the button) or ■ STOP (the lower half of the ring), then turn the DUAL MODE SHUTTLE ring in either the forward or reverse direction as shown.



Notes on the playback picture
- When a tape recorded in the LP mode is played back, skew and noise may appear in the playback modes other than the normal playback.
- When a tape recorded in the SP mode is played back, noise appears in the reverse playback.

Assigning a Desired Operation – AUTO MENU

You can select, in the AUTO MENU, a series of automatic tape operations.
It helps you to perform a certain tape transport job without your attendance. This section shows what you can do with the AUTO MENU and how to assign the desired function.

What You Can Do with the AUTO MENU

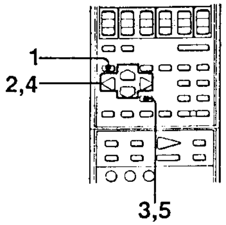
The functions included in the AUTO MENU are as follows:

- **PLAY - REW - POWER OFF**
  Plays back the tape, rewinds the tape when it reaches the end, and turns the power off.
- **GO TO ZERO - STOP**
  Searches for the counter zero point and stops.
- **GO TO ZERO - PLAY**
  Searches for the counter zero point and starts the playback.
- **GO TO REC START - PLAY**
  Searches for the recording start point and starts the playback.

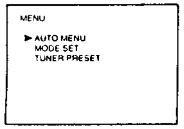
Note
You cannot assign this function if the recording start point data has been erased by:
- Pressing COUNTER RESET.
- Ejecting and re-inserting the cassette.
- Pressing ◀◀◀ HI-SPEED REWIND.

- **REW - POWER OFF**
  Rewinds the tape to the beginning and turns the power off.
- **REW - EJECT - POWER OFF**
  Rewinds the tape to the beginning, ejects the cassette, and turns off the power.
- **REW - PLAY**
  Rewinds the tape to the beginning and starts the playback.
- **REW - TIMER REC**
  Rewinds the tape to the beginning and enters the timer recording standby mode for timer recording when the timer is preset.
  A cassette with its safety tab removed will be rejected.
  When the VTR is in the timer recording standby mode, you can assign this function by:
  - Pressing TIMER REC ON/OFF to cancel the standby mode.
  - Turning on the VTR, and
  - Then calling AUTO MENU.

Assigning Your Desired AUTO MENU Function

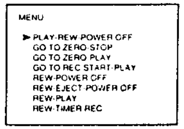


1. Press MENU while the VTR is in the stop mode. The main MENU appears on the TV screen.

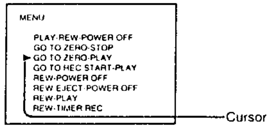


2. Press ▼ or ▲ to move the cursor (▶ mark) to AUTO MENU.

3. Press EXECUTE.
The AUTO MENU appears.



4. Press ▼ or ▲ to move the cursor to your desired AUTO MENU function, such as GO TO ZERO-PLAY, for example.

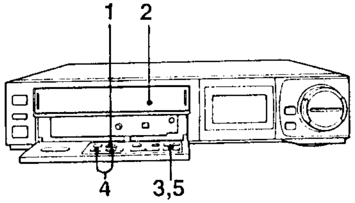


5. Press EXECUTE.
The selected operation will begin.
The selected operation mode will be superimposed on the TV screen for a few seconds. The AUTO indicator also lights in the display window during the AUTO MENU operation.

Note on AUTO MENU operation
You cannot assign the AUTO MENU operation if no cassette is inserted or if the VTR is in modes other than the stop mode.
If this happens, a short beep alerts you.

Quick-Timer Recording

If you want to start timer recording immediately, use the quick-timer recording function. You can set the recording duration in units of 30 minutes, up to 5 hours.
You can also use this function, during recording, to turn off the VTR after the programme is over.



If you are recording, skip steps 1 to 4.

1. Press INPUT SELECT to light TUNER in the display window of the VTR.

2. Insert a cassette with a safety tab.

3. Press QUICK TIMER on the main unit.
The TIMER indicator lights, and 0:00 and the programme position number blinks in the display window.
A cassette with its safety tab removed will be ejected.

4. Press PROGRAM +/– to select the programme position to be recorded.

5. Press QUICK TIMER again within 30 seconds to start recording.
Each press on the button increments recording duration in units of 30 minutes.

Note
If you do not press QUICK TIMER after pressing it once to start recording, the VTR will turn off.

The recording duration decreases minute by minute until 0:00 appears, and then the VTR turns off automatically.

Note on data screen
Data screen information will not be recorded on the tape.

To stop quick-timer recording
Press TIMER REC ON/OFF.

To extend the recording duration during recording
Press QUICK TIMER the desired number of times. One press on the button increases the duration by 30 minutes.

If the VTR is in the timer recording standby mode
Press TIMER REC ON/OFF to turn off the TIMER REC indicator in the display window and then follow steps 4 and 5.

Buttons on the Commander that help you during quick timer recording
- TIMER ON SCREEN displays the programme list on the TV screen.
- TIMER REC CHECK changes the programme position number in the display window.
- COUNTER RESET resets the counter to zero.
- TV/VTR switches the screen to another programme received on the TV.

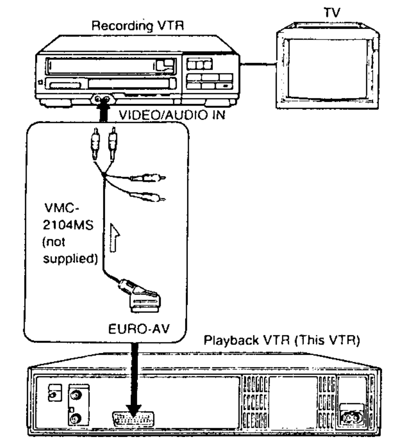
If a power interruption occurs during quick timer recording
Recording will stop and the VTR turns off. If the power interruption lasted for less than one hour and recovered within the quick timer duration, recording will resume from that instant.

Recording onto Another VTR (Dubbing)

Connect your VTR to another VTR, and use your VTR as a playback VTR and another as a recording VTR.

Connecting with Another VTR

Connect using the EURO-AV socket. If the TV is connected to the EURO-AV socket of your VTR, disconnect it, and then re-connect it to another VTR.



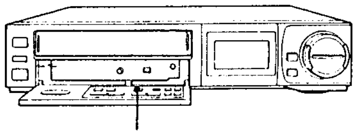
To record from another VTR, connect the VMC-2104 MS connecting cord to the VIDEO/AUDIO OUT connectors of the other (playback) VTR.

Dubbing Operation

1. Turn on the recording VTR and insert a cassette with its safety tab.
2. Select the line input on the recording VTR.
3. Insert a source cassette into the playback VTR.
   The VTR automatically turns on.
4. Search for the playback start point and press ❚❚ PAUSE on the playback VTR.
   The playback VTR stands by for playback.
5. Search for the recording start point and press ❚❚ PAUSE on the recording VTR.
   The recording VTR stands by for recording.
6. Press the record button on the recording VTR, then press ▶ PLAY on the playback VTR.
   Recording starts. The VTR automatically rewinds the tape when it reaches the end.

To stop recording
Press ■ STOP.

If you want to perform the higher-quality dubbing
Press EDIT ON/OFF to light the EDIT indicator in the display window. Note that, however, even if the EDIT mode is turned on, the quality of the dubbed tape will have deteriorated to a certain extent in picture. Avoid dubbing the tape repeatedly.



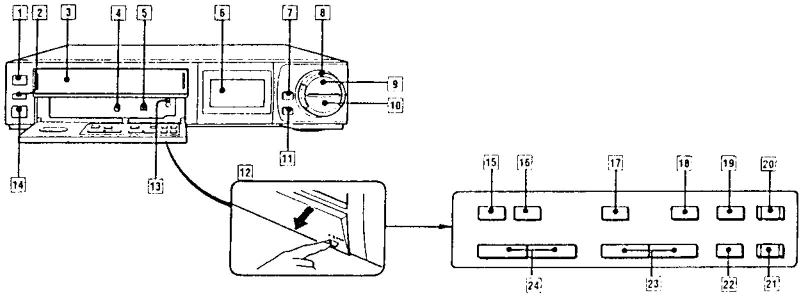
When dubbing from another VTR
Select LINE by pressing the INPUT SELECT button. The LINE indicator will light up in the display window.

Labeling Parts and Controls

To be continued ▶

Refer to pages in circles for details.

Front Panel

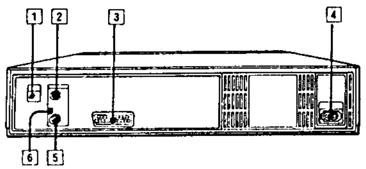


[1] ⏻ ON/STANDBY switch and indicator
[2] ⏏ EJECT button ⓫
[3] Cassette compartment ⓫
[4] SHARPNESS SOFT/SHARP control ⓬
[5] COLOUR SYSTEM selector ⓬
(This switch is provided on the SLV-315VP models only.)
[6] Display window
[7] HI-SPEED REWIND button ⓬
[8] ◀◀◀ DUAL MODE SHUTTLE ring ⓬ ㉒ ㉓
[9] ▶ PLAY button ⓬ ㉒
[10] ■ STOP button ⓬ ⓮
[11] PAUSE button ㉒
[12] ▼ OPEN projection ❻
[13] CL (clear) button ㉛

[14] Remote sensor ❹
[15] TV/VTR button ⓮ ⓯ ⓳
[16] INPUT SELECT button ❻ ❼ ⓮ ㉕
[17] EDIT ON/OFF button ㉖
[18] VPS ON/OFF button ㉑
(This button is provided on the SLV-315VP models only.)
[19] QUICK TIMER button ㉕
[20] TIMER REC ON/OFF button ⓱ ⓳ ⓴
[21] ● REC (record) button ⓮
[22] TRACKING AUTO/MANUAL button ⓭
[23] TRACKING NORMAL/SLOW and STILL ADJUST ▼/▲ buttons ⓭ ㉒
[24] PROGRAM +/– buttons ❻ ⓮ ⓰ ㉕

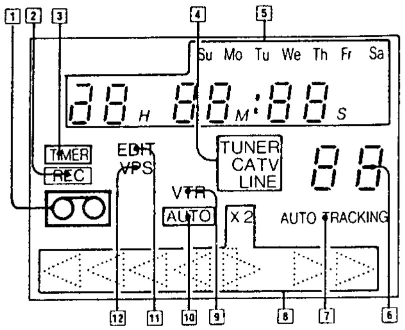
Labeling Parts and Controls

Rear Panel



[1] RF CHANNEL screw (30 - 39) ❻
[2] AERIAL OUT socket ❹
[3] ⊡- EURO-AV (21-pin) socket ❹ ㉖
[4] AC inlet ❹
[5] AERIAL IN socket ❹
[6] LOCAL/DX switch ❻

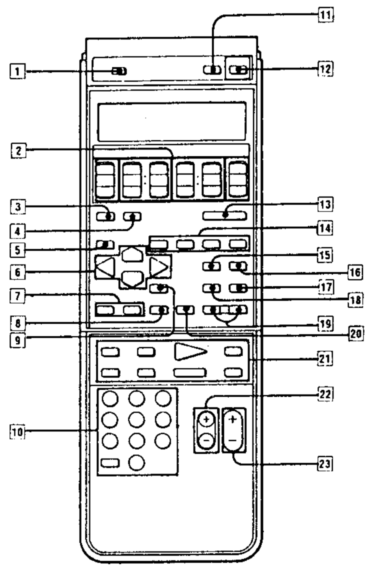
Indications in the Display Window



[1] Cassette indicator (Appears when a cassette is loaded.)
[2] REC (recording) indicator
[3] TIMER recording indicator
[4] Input mode indicators (TUNER, CATV, LINE)
[5] Linear tape counter and clock
[6] Programme position number indicator
[7] AUTO TRACKING indicator
[8] Tape operation indicator
[9] VTR indicator
[10] AUTO (AUTO MENU) indicator
[11] EDIT indicator
[12] VPS indicator (SLV-315VP models only)

Remote Commander

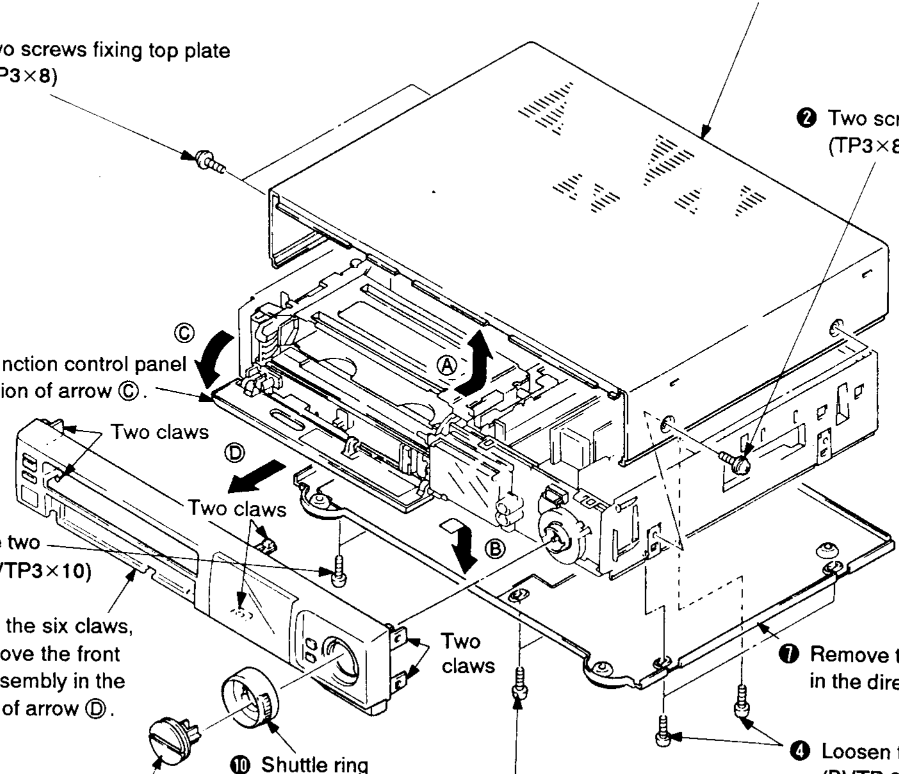
The buttons on the Commander with the same name or mark as those on the unit have the same function. The buttons with a red dot can be used to remotely control Sony TVs with the [IR] mark when the [TV]/[VTR] selector set to [TV]. The TV/VTR button and/or the -/-- (10's digit) button cannot operate certain Sony TVs.



[1] [TV]/[VTR] selector ❹ ⓮
[2] Timer recording/clock set buttons ❺ ⓰
D (date)
TURN ON time
TURN OFF time
PROG (programme position) +/–
[3] TIMER SET button ⓰
[4] CLOCK SET button ❺
[5] MENU button ❿ ⓱ ⓲ ㉔
[6] CURSOR ▲/▼/◀/▶ buttons
[7] FRAME ◀II/II▶/</> buttons ㉒
[8] I► SLOW button ㉒
[9] EXECUTE button ❾ ❿ ⓱ ⓲ ㉔
[10] Numeric buttons ❽
[11] TV/VTR button ⓮ ⓯ ⓳
[12] ⏻(on/standby) button
[13] TRANSMIT button ❺ ⓱
[14] TIMER REC buttons
TIMER ON SCREEN ⓳
CHECK ⓴
CLEAR ⓴
ON/OFF ⓱ ⓳ ⓴
[15] CLOCK/COUNTER button ⓭ ⓮
[16] INPUT SELECT button ❻ ❼ ⓮
[17] DATA SCREEN button ⓬ ⓮
[18] COUNTER RESET button ⓭ ⓮
[19] ● REC (record) buttons ⓮
[20] x 2 button ㉒
[21] Tape transport buttons
II PAUSE ⓯ ㉒
▶ PLAY ⓬ ㉒
■ STOP ⓬ ⓮
◀◀◀ HI-SPEED REWIND ⓬
[▶▶]/[◀◀] SEARCH (reverse/forward) ㉒
◀◀ REW (rewind) ⓬ ㉒
▶▶ FF (fast-forward) ⓬ ㉒
[22] PROG (programme) +/– buttons ⓮
[23] VOL (volume) +/– buttons ⓮

SECTION 2
DISASSEMBLY

2-1. FRONT PANEL ASSEMBLY AND REMOVAL OF CABINET



❶ Two screws fixing top plate (TP3×8)

❷ Two screws fixing top plate (TP3×8)

❸ Remove the top plate in the direction of arrow Ⓐ.

❹ Loosen the three screws (BVTP 3×10)

❺ Loosen the two screws (BVTP3×10)

❻ Loosen the two screws (BVTP3×10)

❼ Remove the bottom plate assembly in the direction of arrow Ⓑ.

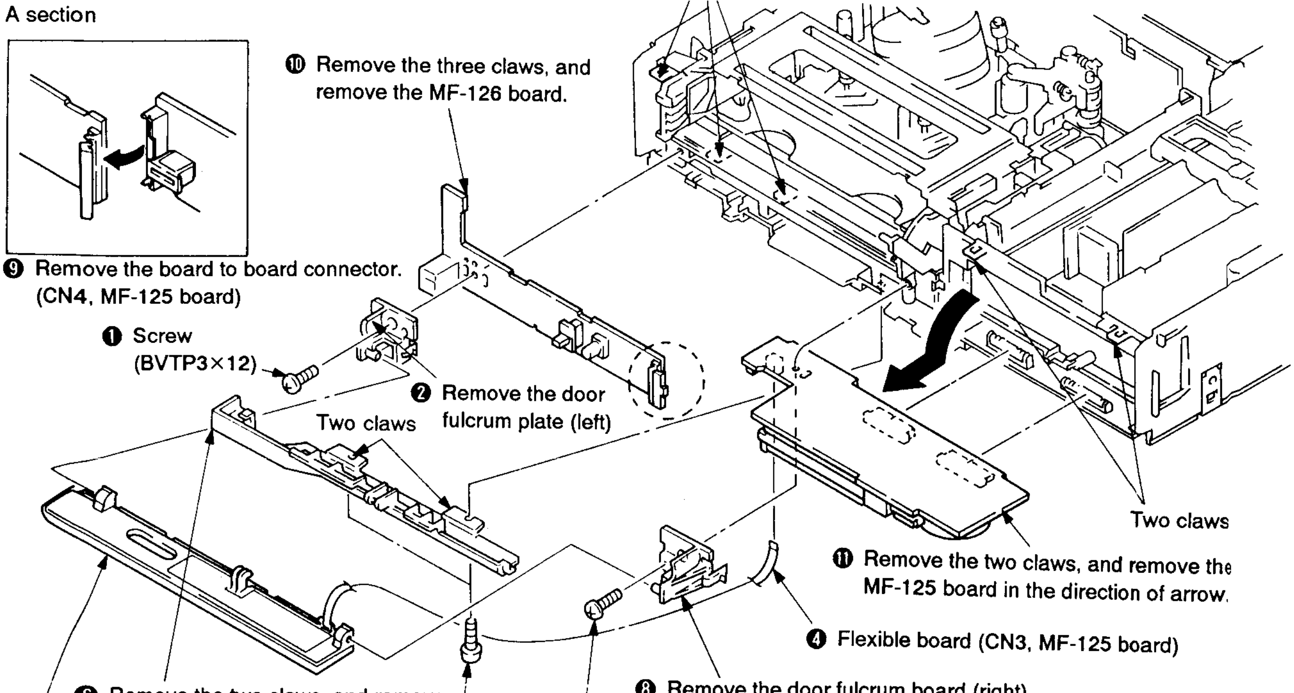
❽ Open the function control panel in the direction of arrow Ⓒ.

❾ Playback and stop button assembly

❿ Shuttle ring

⓫ Remove the six claws, and remove the front panel assembly in the direction of arrow Ⓓ.

2-2. REMOVAL OF FUNCTION CONTROL PANEL AND MF-125/MF-126 BOARD



❶ Screw (BVTP3×12)

❷ Remove the door fulcrum plate (left)

❸ Function control panel

❹ Flexible board (CN3, MF-125 board)

❺ Two screws (BVTP3×10)

❻ Remove the two claws, and remove the frame escutcheon assembly.

❼ Screw (BVTP3×12)

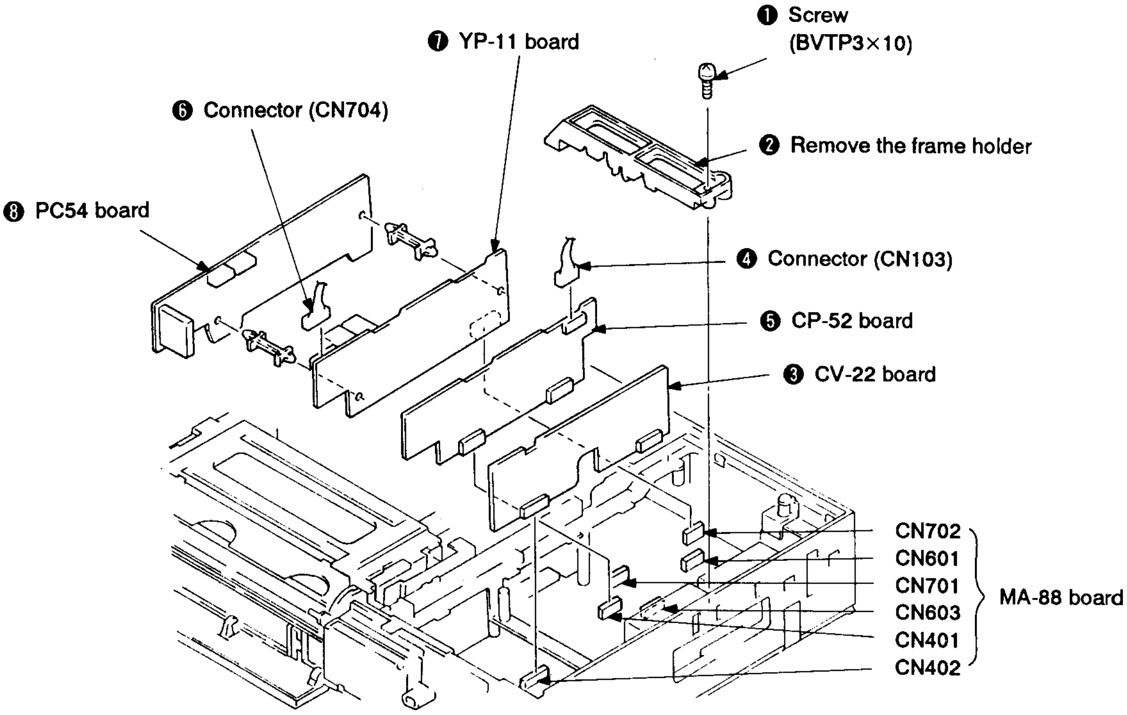
❽ Remove the door fulcrum board (right).

❾ Remove the board to board connector. (CN4, MF-125 board)

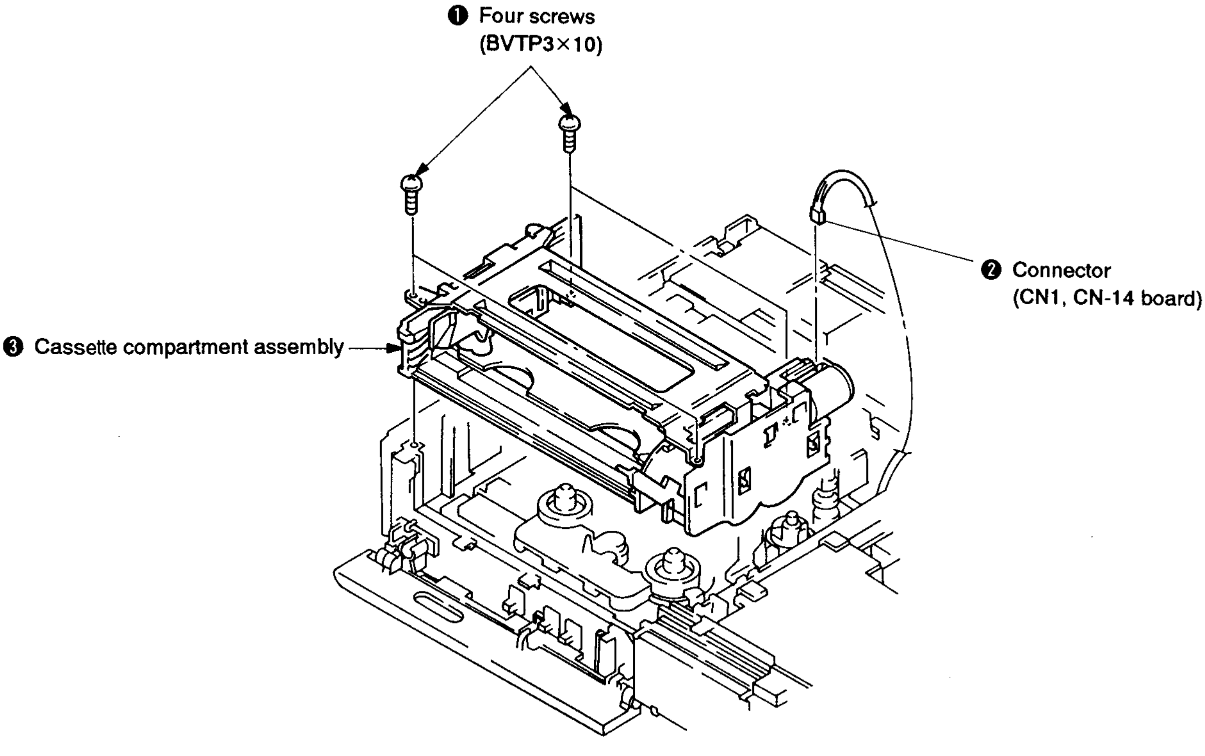
❿ Remove the three claws, and remove the MF-126 board.

⓫ Remove the two claws, and remove the MF-125 board in the direction of arrow.

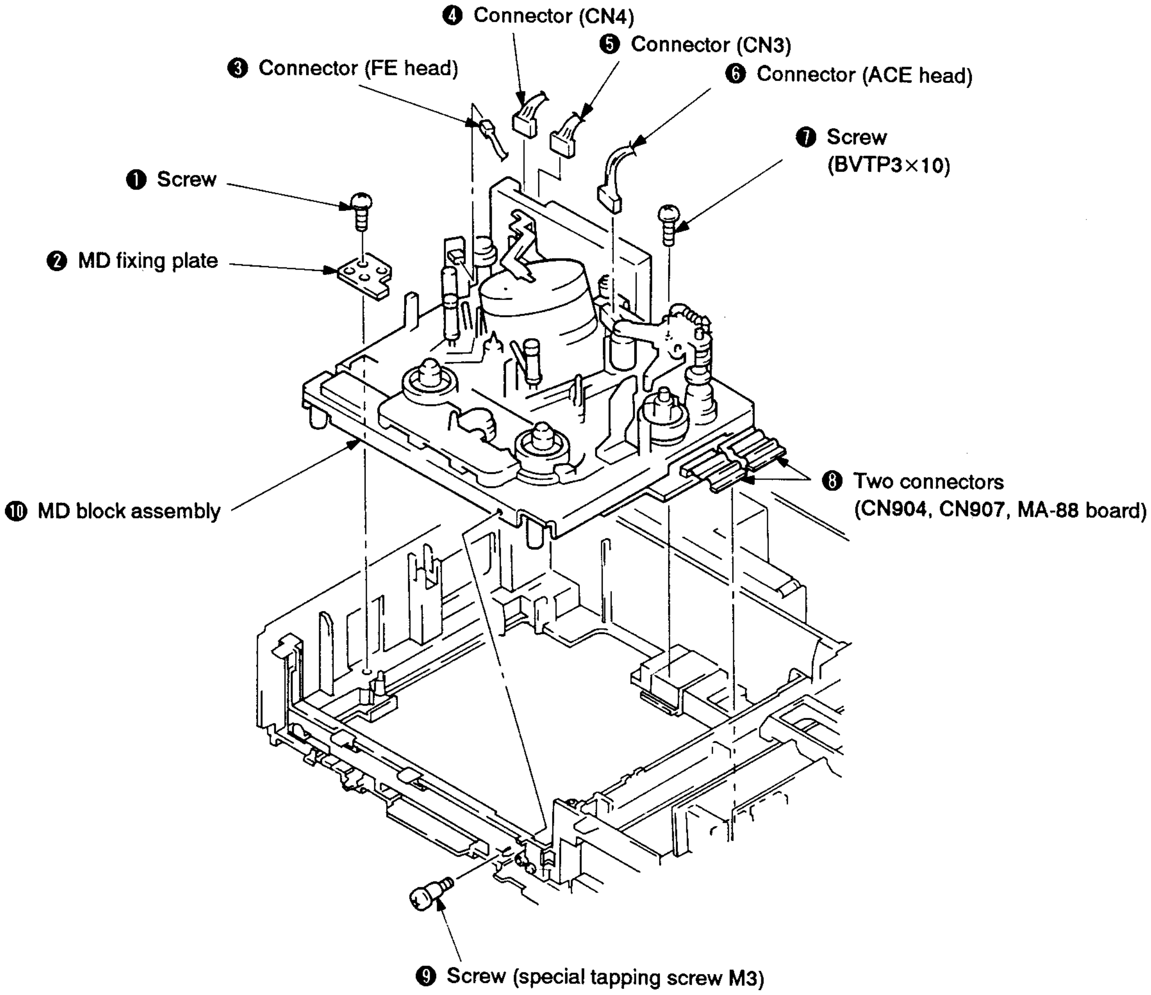
2-3. REMOVAL OF PC-54, YP-11, CV-22 AND CP-52 BOARDS


❶ Screw (BVTP3×10)
❼ YP-11 board
❻ Connector (CN704)
❷ Remove the frame holder
❽ PC54 board
❹ Connector (CN103)
❺ CP-52 board
❸ CV-22 board
CN702
CN601
CN701
CN603
CN401
CN402
MA-88 board

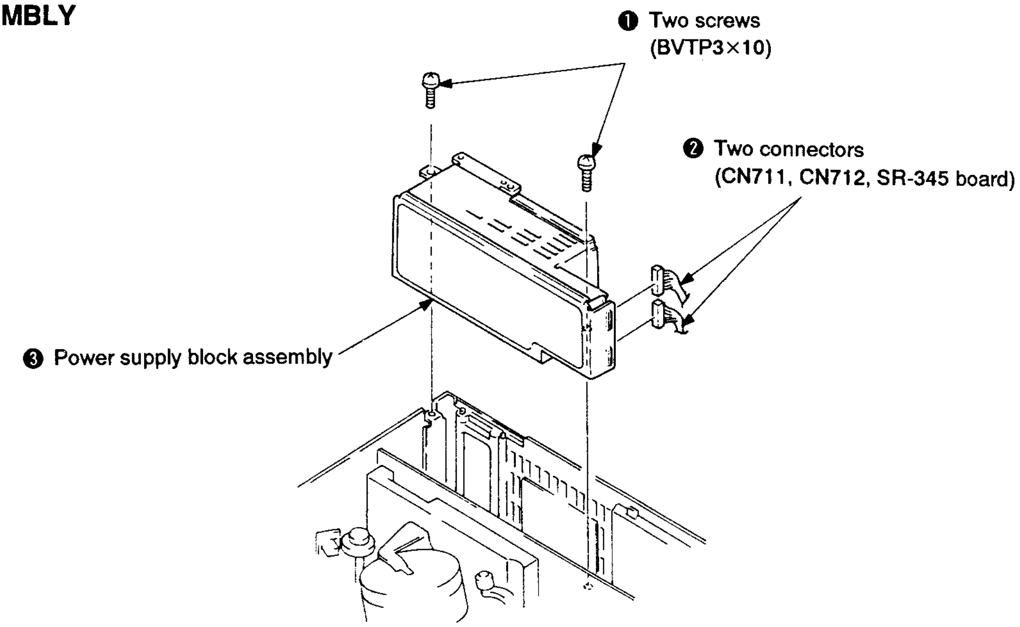
2-4. REMOVAL OF CASSETTE COMPARTMENT ASSEMBLY


❶ Four screws (BVTP3×10)
❷ Connector (CN1, CN-14 board)
❸ Cassette compartment assembly

2-5. REMOVAL OF MD BLOCK

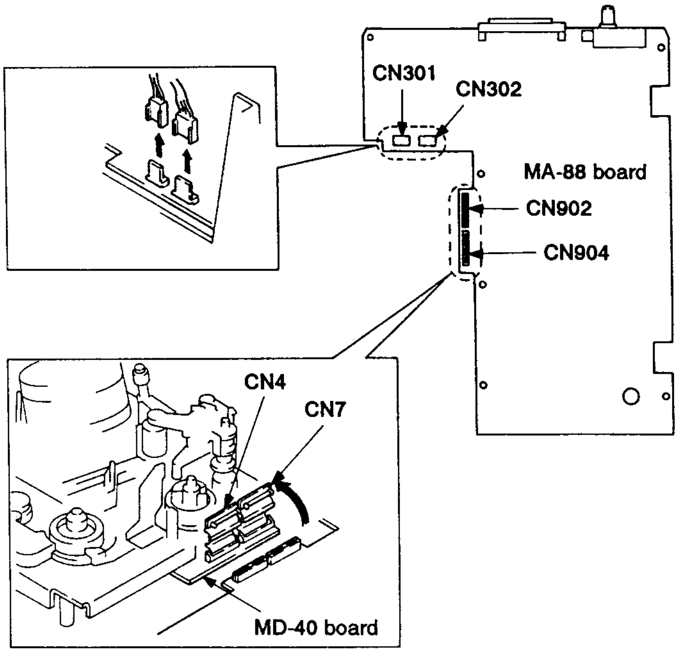

④ Connector (CN4)
⑤ Connector (CN3)
③ Connector (FE head)
⑥ Connector (ACE head)
⑦ Screw
(BVTP3×10)
① Screw
② MD fixing plate
⑧ Two connectors
(CN904, CN907, MA-88 board)
⑩ MD block assembly
⑨ Screw (special tapping screw M3)

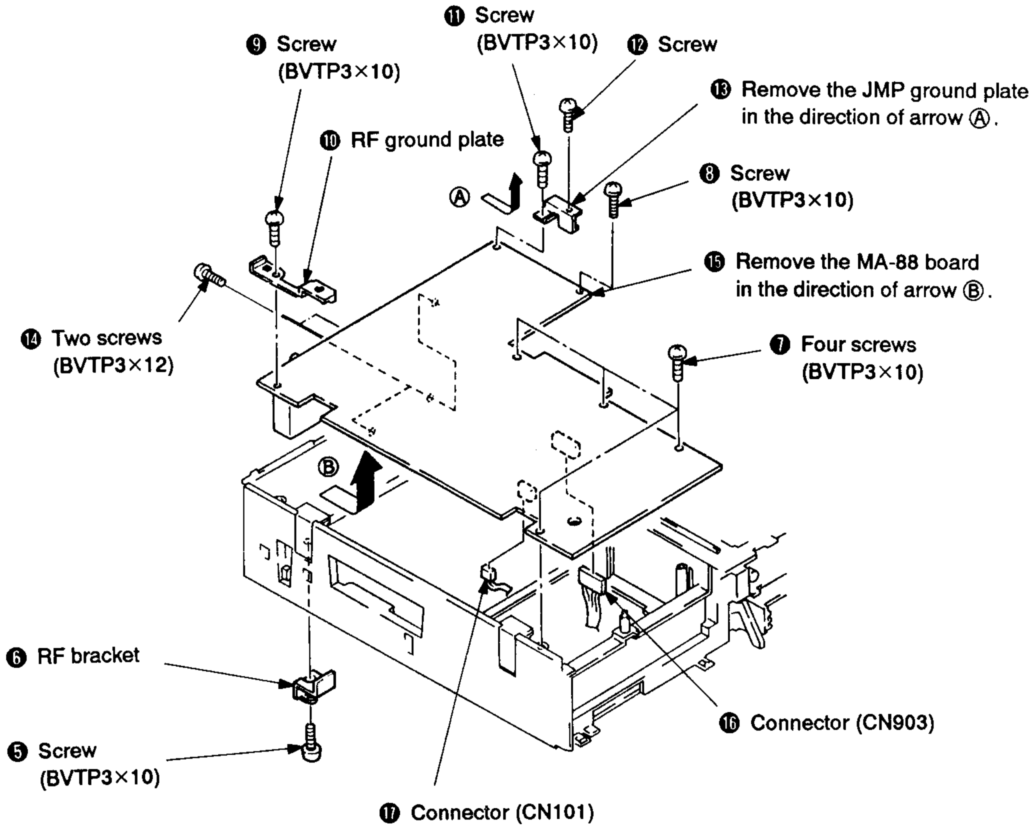
2-6. REMOVAL OF POWER SUPPLY BLOCK ASSEMBLY


① Two screws
(BVTP3×10)
② Two connectors
(CN711, CN712, SR-345 board)
③ Power supply block assembly

2-7. REMOVAL OF MA-88 BOARD

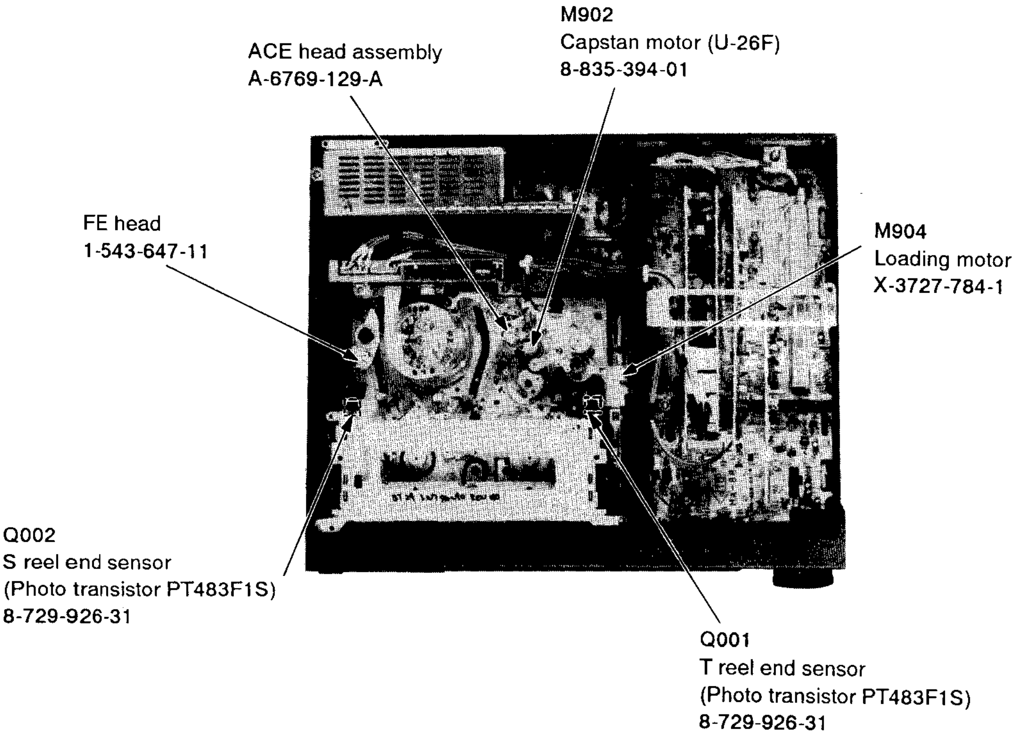
❶ Remove the MF-125 board according to 2-2.
❷ Remove PC-54, YP-11, CV22 and CP-52 board according to 2-3.
❸ Remove the power supply block assembly according to 2-6.
❹ Remove the four connectors (CN301, 302, 904 and 907) from the MA-88 board.


CN301
CN302
MA-88 board
CN902
CN904
CN4
CN7
MD-40 board

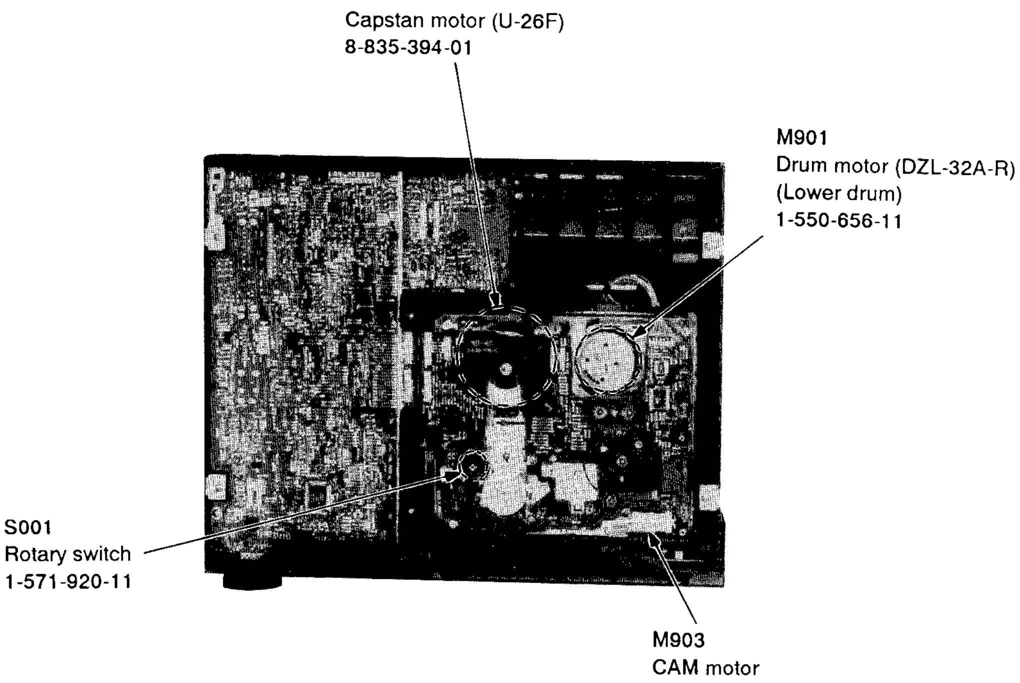

⓫ Screw (BVTP3×10)
❾ Screw (BVTP3×10)
⓬ Screw
⓭ Remove the JMP ground plate in the direction of arrow Ⓐ.
❿ RF ground plate
Ⓐ
❽ Screw (BVTP3×10)
⓯ Remove the MA-88 board in the direction of arrow Ⓑ.
⓮ Two screws (BVTP3×12)
❼ Four screws (BVTP3×10)
Ⓑ
❻ RF bracket
❺ Screw (BVTP3×10)
⓰ Connector (CN903)
⓱ Connector (CN101)

2-8. INTERNAL VIEWS

— Top Side —

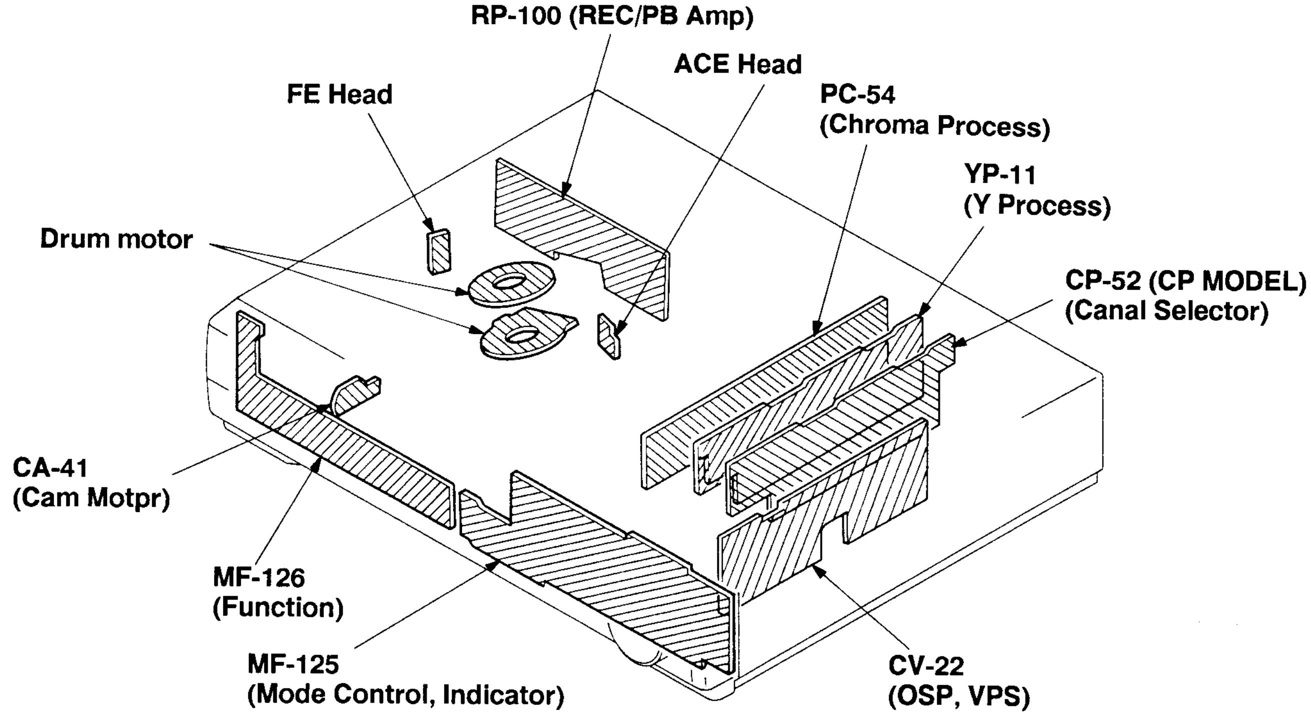

ACE head assembly
A-6769-129-A
M902
Capstan motor (U-26F)
8-835-394-01
FE head
1-543-647-11
M904
Loading motor
X-3727-784-1
Q002
S reel end sensor
(Photo transistor PT483F1S)
8-729-926-31
Q001
T reel end sensor
(Photo transistor PT483F1S)
8-729-926-31

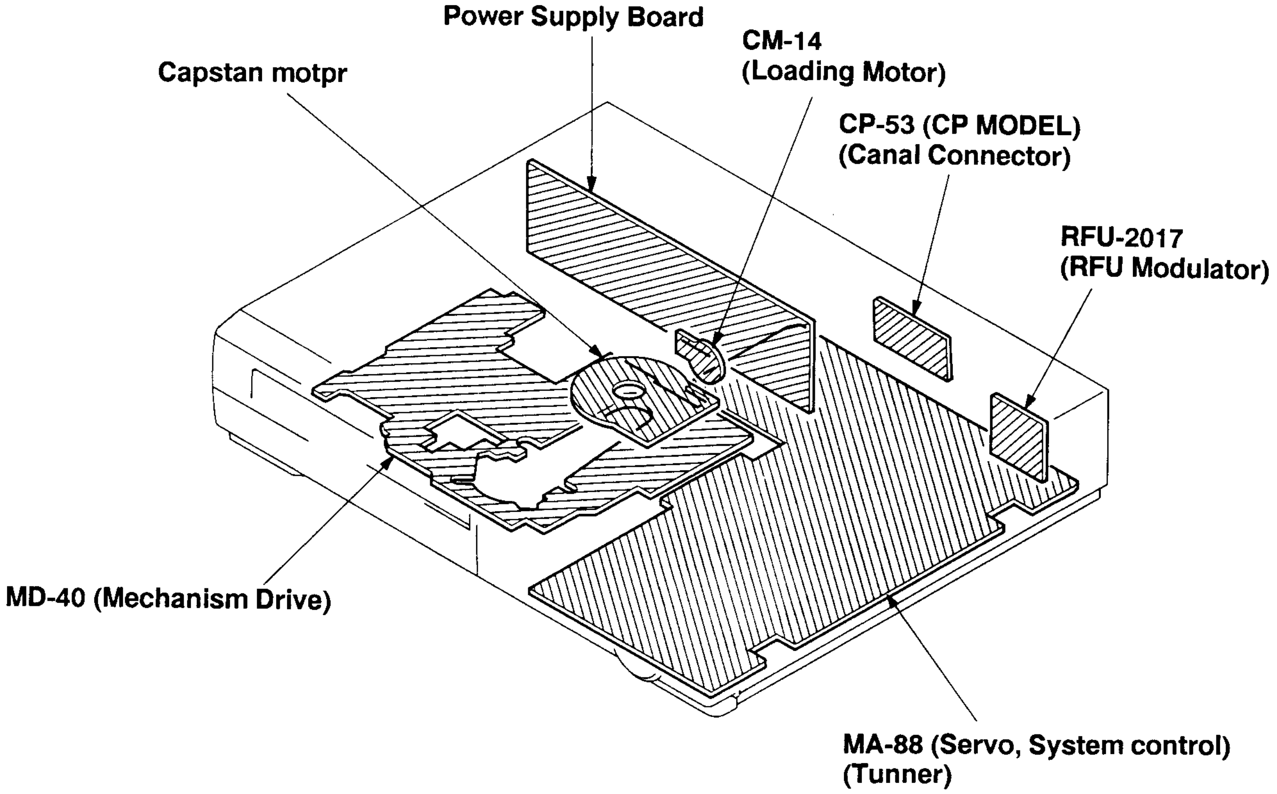
— Bottom Side —


M902
Capstan motor (U-26F)
8-835-394-01
M901
Drum motor (DZL-32A-R)
(Lower drum)
1-550-656-11
S001
Rotary switch
1-571-920-11
M903
CAM motor

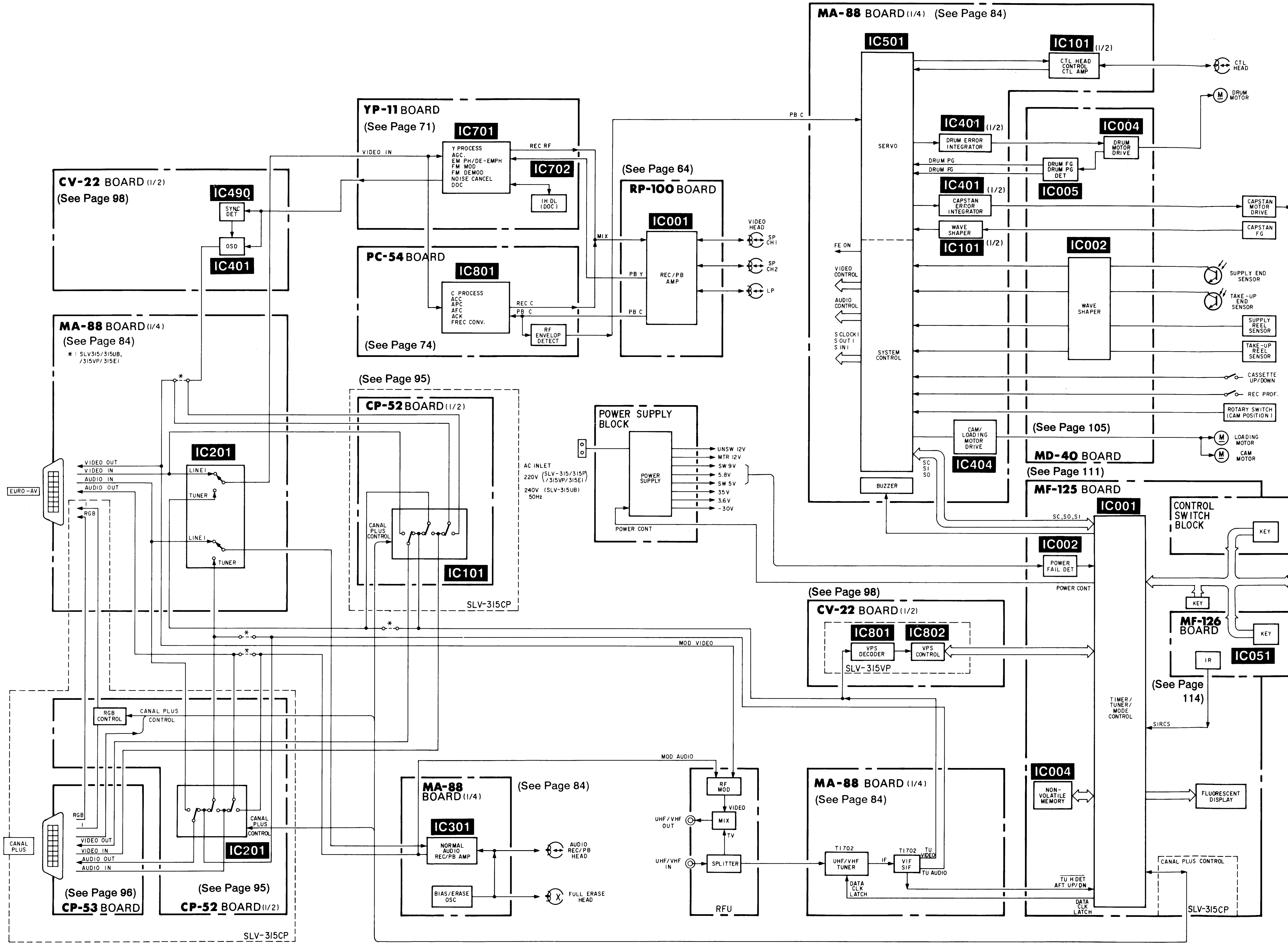
SECTION 3
DIAGRAMS

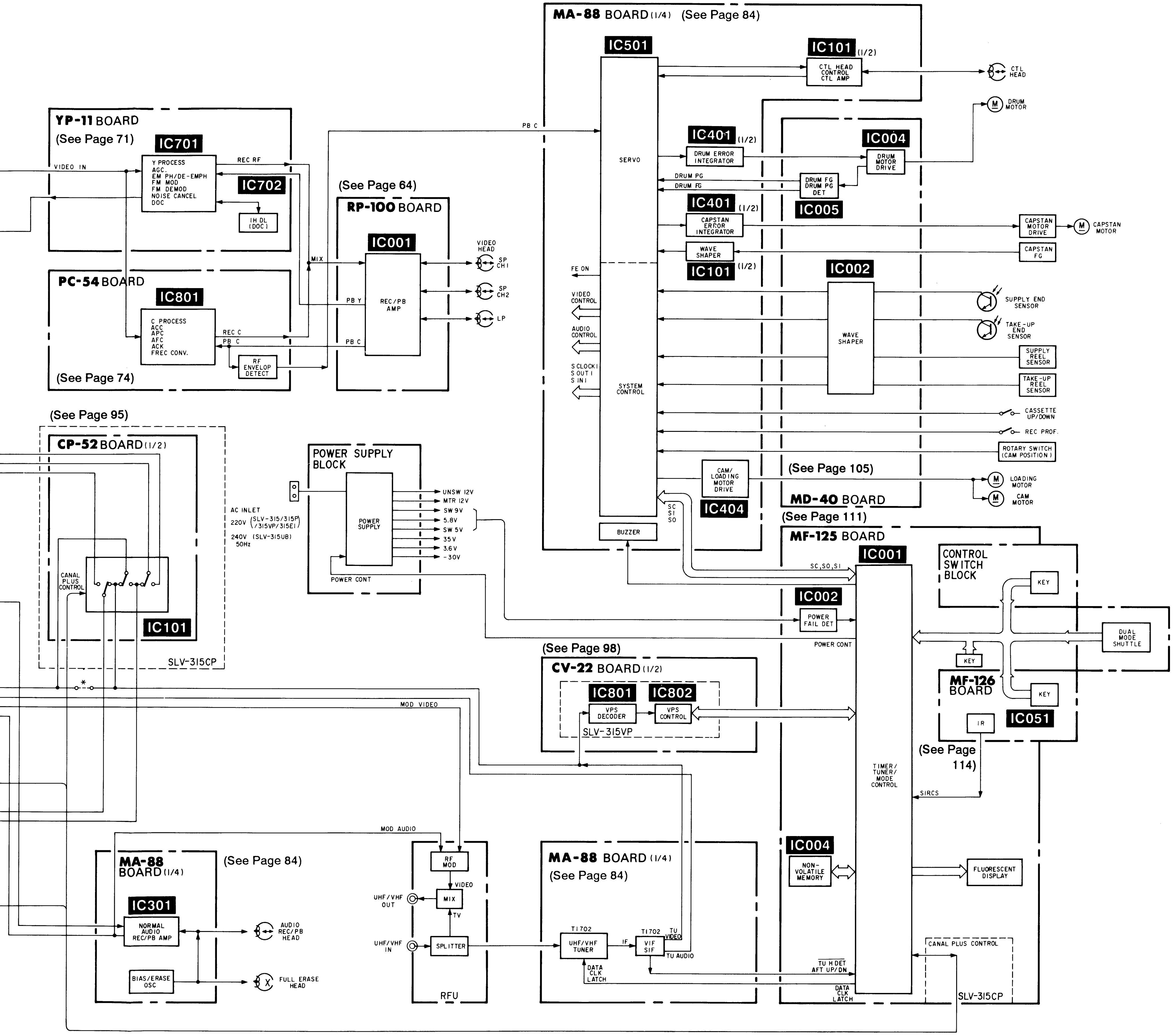
3-1. CIRCUIT BOARDS LOCATION


RP-100 (REC/PB Amp)
ACE Head
FE Head
PC-54
(Chroma Process)
YP-11
(Y Process)
Drum motor
CP-52 (CP MODEL)
(Canal Selector)
CA-41
(Cam Motpr)
MF-126
(Function)
MF-125
(Mode Control, Indicator)
CV-22
(OSP, VPS)

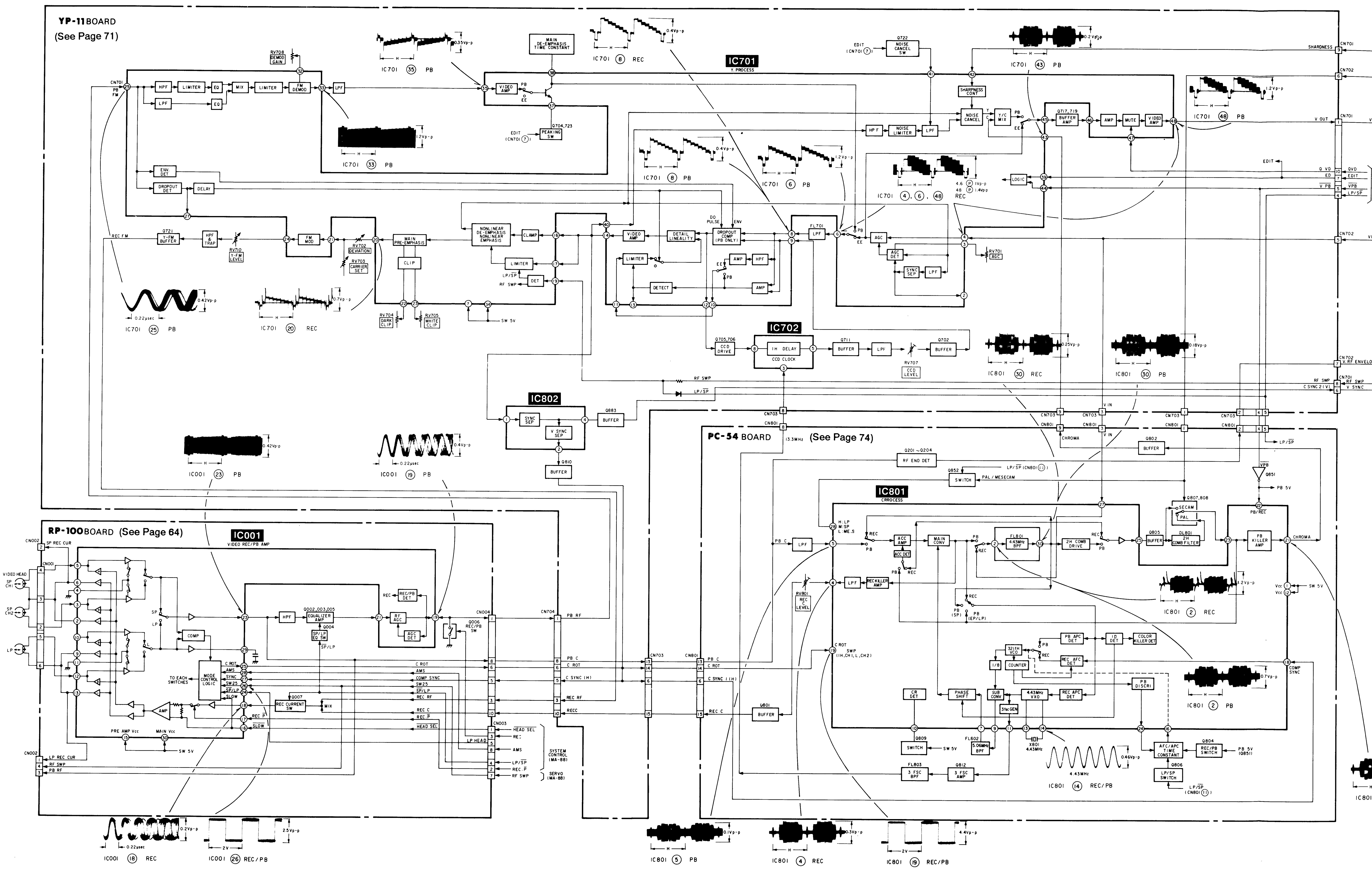

Power Supply Board
CM-14
(Loading Motor)
Capstan motpr
CP-53 (CP MODEL)
(Canal Connector)
RFU-2017
(RFU Modulator)
MD-40 (Mechanism Drive)
MA-88 (Servo, System control)
(Tunner)

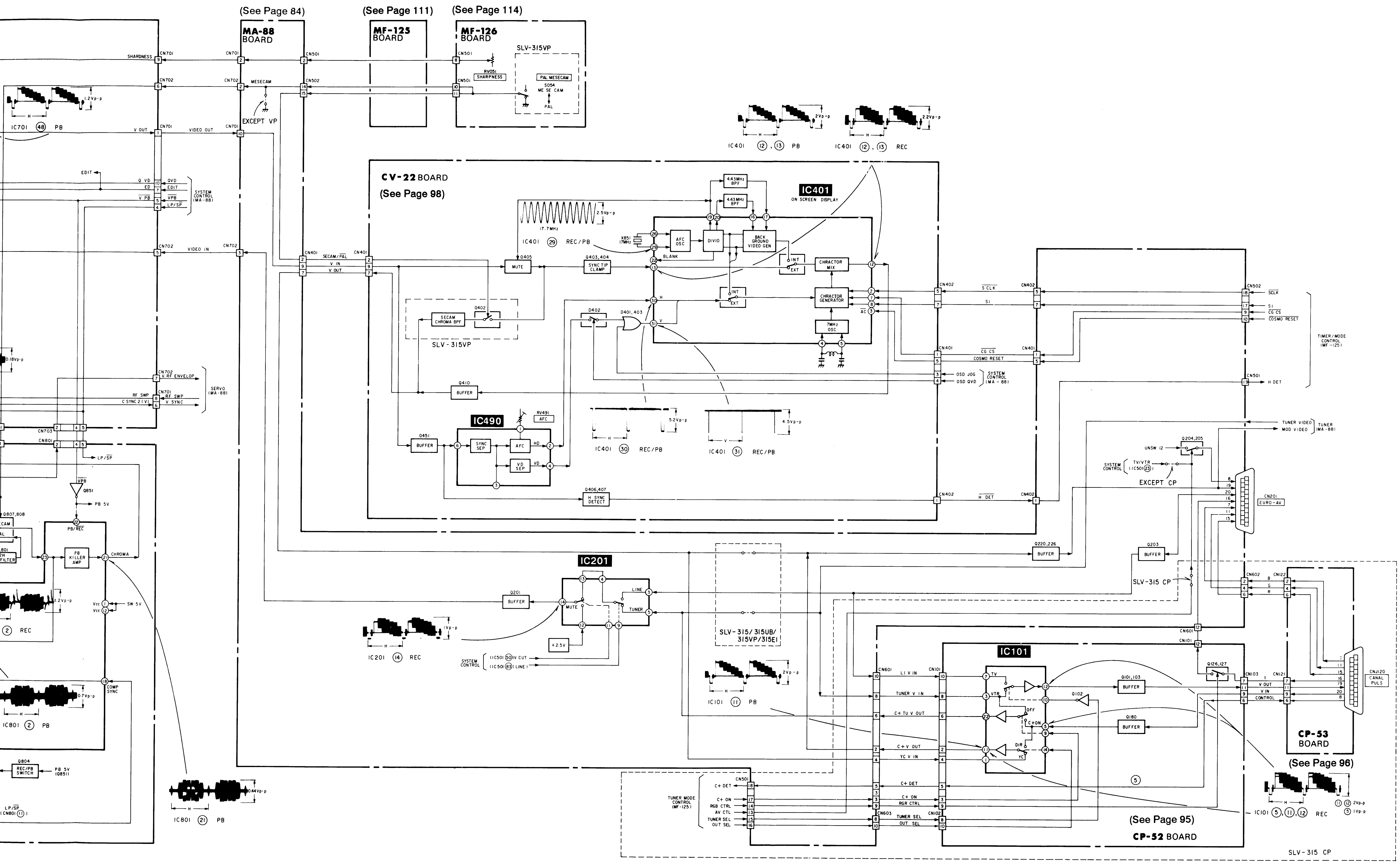
3-2. OVERALL BLOCK DIAGRAM


MA-88 BOARD (1/4) (See Page 84)
IC501
SERVO
SYSTEM CONTROL
IC101 (1/2)
CTL HEAD CONTROL CTL AMP
CTL HEAD
DRUM MOTOR
IC401 (1/2)
DRUM ERROR INTEGRATOR
IC004
DRUM MOTOR DRIVE
DRUM FG DRUM PG DET
IC005
DRUM PG
DRUM FG
CAPSTAN ERROR INTEGRATOR
WAVE SHAPER
CAPSTAN MOTOR DRIVE
CAPSTAN FG
IC002
SUPPLY END SENSOR
TAKE-UP END SENSOR
SUPPLY REEL SENSOR
TAKE-UP REEL SENSOR
CASSETTE UP/DOWN
REC PROF.
ROTARY SWITCH (CAM POSITION)
CAM/LOADING MOTOR DRIVE
IC404
LOADING MOTOR
CAM MOTOR
(See Page 105)
MD-40 BOARD
BUZZER
FE ON
VIDEO CONTROL
AUDIO CONTROL
S CLOCK I
S OUT I
S IN I
SC SI SO
PB C
YP-11 BOARD (See Page 71)
IC701
Y PROCESS AGC. EM PH/DE-EMPH FM MOD FM DEMOD NOISE CANCEL DOC
IC702
1H DL (DOC)
VIDEO IN
REC RF
PC-54 BOARD (See Page 74)
IC801
C PROCESS ACC APC AFC ACK FREC CONV.
REC C
PB C
RF ENVELOP DETECT
(See Page 64)
RP-100 BOARD
IC001
REC/PB AMP
MIX
PB Y
VIDEO HEAD
SP CH1
SP CH2
LP
CV-22 BOARD (1/2) (See Page 98)
IC490
SYNC DET
OSD
IC401
MA-88 BOARD (1/4) (See Page 84)
✱: SLV315/315UB, /315VP/315EI
VIDEO OUT
VIDEO IN
AUDIO IN
AUDIO OUT
RGB
EURO-AV
IC201
LINE1
TUNER
(See Page 95)
CP-52 BOARD (1/2)
CANAL PLUS CONTROL
IC101
SLV-315CP
POWER SUPPLY BLOCK
POWER SUPPLY
AC INLET
220V (SLV-315/315P/315VP/315EI)
240V (SLV-315UB) 50Hz
UNSW 12V
MTR 12V
SW 9V
5.8V
SW 5V
3.5V
3.6V
-30V
POWER CONT
(See Page 111)
MF-125 BOARD
IC001
SC,SO,SI
IC002
POWER FAIL DET
POWER CONT
TIMER/TUNER/MODE CONTROL
SIRCS
IC004
NON-VOLATILE MEMORY
FLUORESCENT DISPLAY
CANAL PLUS CONTROL
TU H DET
AFT UP/DN
DATA CLK LATCH
SLV-315CP
CONTROL SWITCH BLOCK
KEY
MF-126 BOARD
KEY
IR
IC051
(See Page 114)
(See Page 98)
CV-22 BOARD (1/2)
IC801
IC802
VPS DECODER
VPS CONTROL
SLV-315VP
MOD VIDEO
MOD AUDIO
RF MOD
VIDEO
MIX
TV
UHF/VHF OUT
UHF/VHF IN
SPLITTER
RFU
MA-88 BOARD (1/4) (See Page 84)
T1702
UHF/VHF TUNER
IF
VIF SIF
TU VIDEO
TU AUDIO
DATA CLK LATCH
MA-88 BOARD (1/4) (See Page 84)
IC301
NORMAL AUDIO REC/PB AMP
AUDIO REC/PB HEAD
BIAS/ERASE OSC
FULL ERASE HEAD
RGB CONTROL
CANAL PLUS CONTROL
CANAL PLUS
IC201
CANAL PLUS CONTROL
VIDEO OUT
VIDEO IN
AUDIO OUT
AUDIO IN
(See Page 96)
CP-53 BOARD
(See Page 95)
CP-52 BOARD (1/2)
SLV-315CP

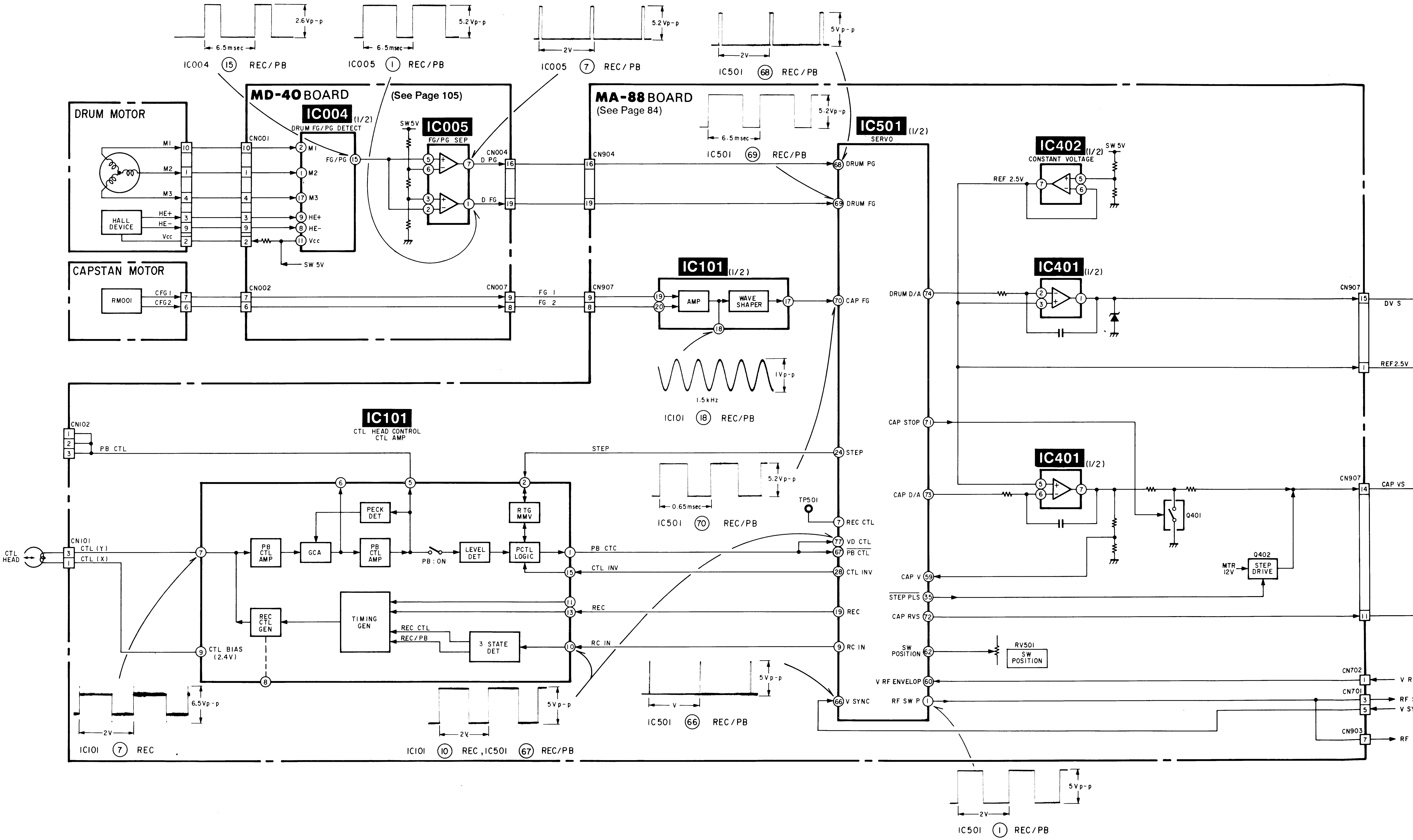

YP-11 BOARD
(See Page 71)
IC701
VIDEO IN
Y PROCESS
AGC.
EM PH/DE-EMPH
FM MOD
FM DEMOD
NOISE CANCEL
DOC
REC RF
IC702
IH DL (DOC)
PC-54 BOARD
IC801
C PROCESS
ACC
APC
AFC
ACK
FREC CONV.
REC C
PB C
RF ENVELOP DETECT
(See Page 74)
(See Page 64)
RP-100 BOARD
IC001
MIX
PB Y
PB C
REC/PB AMP
VIDEO HEAD
SP CH1
SP CH2
LP
MA-88 BOARD (1/4) (See Page 84)
IC501
PB C
SERVO
IC101 (1/2)
CTL HEAD CONTROL CTL AMP
CTL HEAD
DRUM MOTOR
IC401 (1/2)
DRUM ERROR INTEGRATOR
IC004
DRUM MOTOR DRIVE
DRUM PG
DRUM FG
DRUM FG DRUM PG DET
IC005
IC401 (1/2)
CAPSTAN ERROR INTEGRATOR
CAPSTAN MOTOR DRIVE
CAPSTAN MOTOR
WAVE SHAPER
IC101 (1/2)
CAPSTAN FG
FE ON
VIDEO CONTROL
AUDIO CONTROL
S CLOCK I
S OUT I
S IN I
SYSTEM CONTROL
IC002
WAVE SHAPER
SUPPLY END SENSOR
TAKE-UP END SENSOR
SUPPLY REEL SENSOR
TAKE-UP REEL SENSOR
CASSETTE UP/DOWN
REC PROF.
ROTARY SWITCH (CAM POSITION)
CAM/LOADING MOTOR DRIVE
IC404
(See Page 105)
MD-40 BOARD
LOADING MOTOR
CAM MOTOR
BUZZER
SC
SI
SO
(See Page 95)
CP-52 BOARD (1/2)
CANAL PLUS CONTROL
IC101
SLV-315CP
*
POWER SUPPLY BLOCK
AC INLET
220V (SLV-315/315P/315VP/315EI)
240V (SLV-315UB)
50Hz
POWER SUPPLY
UNSW 12V
MTR 12V
SW 9V
5.8V
SW 5V
35V
3.6V
-30V
POWER CONT
(See Page 111)
MF-125 BOARD
IC001
SC,SO,SI
IC002
POWER FAIL DET
POWER CONT
CONTROL SWITCH BLOCK
KEY
KEY
DUAL MODE SHUTTLE
MF-126 BOARD
KEY
IR
IC051
(See Page 114)
SIRCS
TIMER/TUNER/MODE CONTROL
(See Page 98)
CV-22 BOARD (1/2)
IC801
IC802
VPS DECODER
VPS CONTROL
SLV-315VP
MOD VIDEO
MOD AUDIO
MA-88 BOARD (1/4)
(See Page 84)
IC301
NORMAL AUDIO REC/PB AMP
AUDIO REC/PB HEAD
BIAS/ERASE OSC
FULL ERASE HEAD
RF MOD
VIDEO
MIX
TV
UHF/VHF OUT
UHF/VHF IN
SPLITTER
RFU
MA-88 BOARD (1/4)
(See Page 84)
T1702
UHF/VHF TUNER
IF
T1702
VIF SIF
TU VIDEO
TU AUDIO
DATA CLK LATCH
IC004
NON-VOLATILE MEMORY
FLUORESCENT DISPLAY
TU H DET
AFT UP/DN
DATA CLK LATCH
CANAL PLUS CONTROL
SLV-315CP

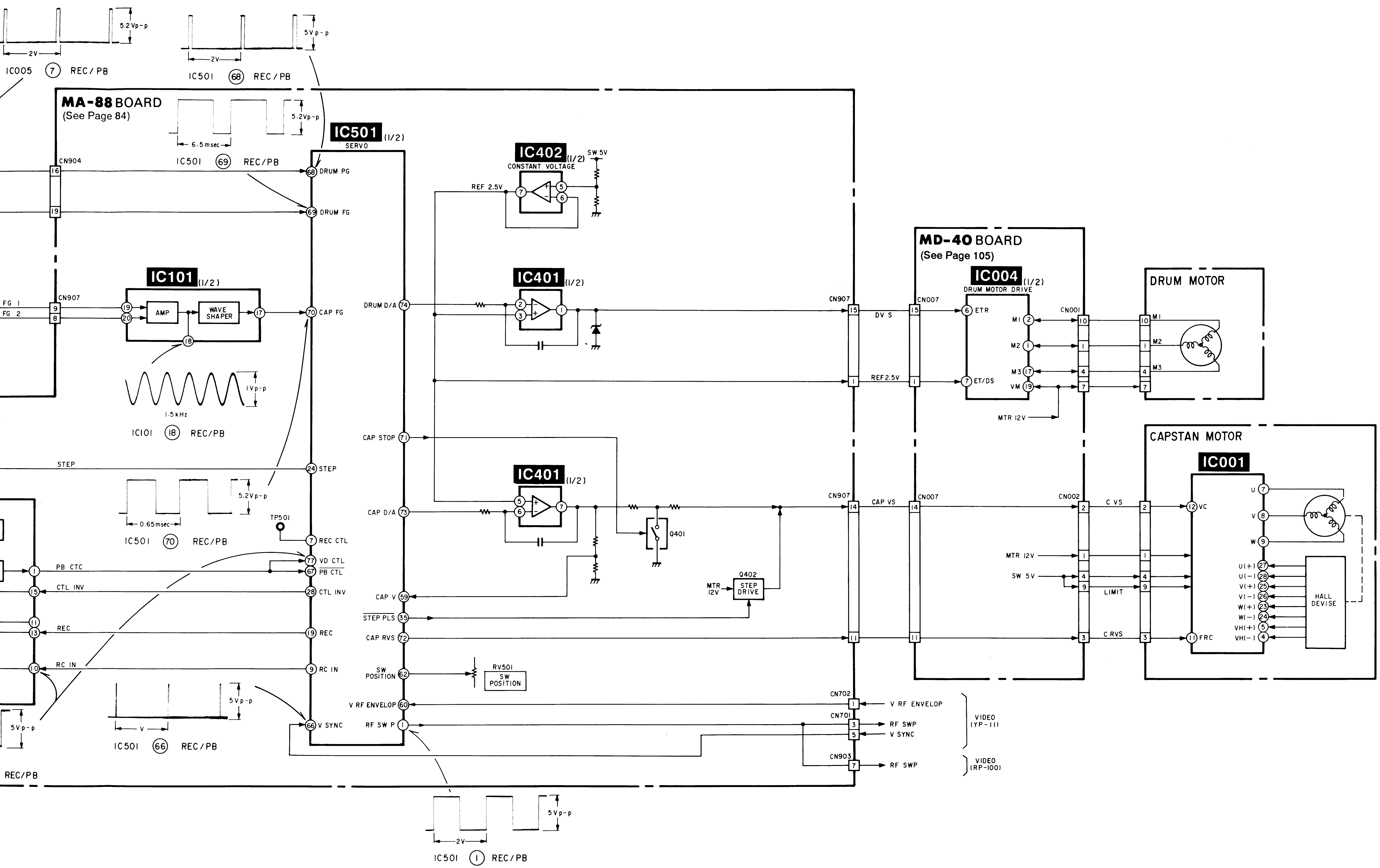
3-3. VIDEO BLOCK DIAGRAM


YP-11 BOARD
(See Page 71)
IC701
Y. PROCESS
RV708 DEMOD GAIN
MAIN DE-EMPHASIS TIME CONSTANT
CN701 PB FM
HPF
LIMITER
EQ
MIX
LPF
FM DEMOD
VIDEO AMP
PB
EE
Q704,723 PEAKING SW
EDIT (CN701 ⑦)
IC701 ㉟ PB
0.35Vp-p
IC701 ⑧ REC
0.4Vp-p
IC701 ㉝ PB
1.2Vp-p
ENV. DET
DROPOUT DET
DELAY
REC FM
Q721 Y-FM BUFFER
HPF & TRAP
RV710 Y-FM LEVEL
FM MOD
RV702 DEVIATION
RV703 CARRIER SET
MAIN PRE-EMPHASIS
CLIP
RV704 DARK CLIP
RV705 WHITE CLIP
NONLINEAR DE-EMPHASIS NONLINEAR EMPHASIS
CLAMP
LIMITER
LP/SP
RF SWP
DET
SW 5V
VIDEO AMP
DETAIL LINEALITY
DO PULSE
ENV
DROPOUT COMP (PB ONLY)
FL701 LPF
AGC
AGC DET
SYNC SEP
RV701 AGC
DETECT
AMP
HPF
IC701 ㉕ PB
0.42Vp-p
0.22μsec
IC701 ⑳ REC
0.7Vp-p
IC701 ⑧ PB
0.4Vp-p
IC701 ⑥ PB
1.2Vp-p
IC701 ④, ⑥, ㊽ REC
4.6 Ⓟ 1Vp-p
48 Ⓟ 1.4Vp-p
EDIT (CN701 ⑦)
Q722 NOISE CANCEL SW
SHARPNESS CONT
NOISE CANCEL
NOISE LIMITER
Y/C MIX
Q717,719 BUFFER AMP
AMP
MUTE
VIDEO AMP
IC701 ㊸ PB
0.2Vp-p
IC701 ㊽ PB
1.2Vp-p
LOGIC
SHARDNESS
CN701
CN702
V OUT
EDIT
QVD
ED
VPB
V PB
LP/SP
IC702
Q705,706 CCD DRIVE
1H DELAY
CCD CLOCK
Q711 BUFFER
RV707 CCD LEVEL
Q702 BUFFER
IC801 ㉚ REC
0.25Vp-p
IC801 ㉚ PB
0.18Vp-p
V.RF ENVELOPE
RF SWP
C SYNC 2 (V)
V SYNC
IC802
SYNC SEP
V SYNC SEP
Q803 BUFFER
Q810 BUFFER
CN703
CN801
V IN
CHROMA
PC-54 BOARD (See Page 74)
13.3MHz
Q201~Q204 RF END DET
Q852 SWITCH
LP/SP (CN801 ⑪)
PAL/MESECAM
IC801
CRROCESS
Q802 BUFFER
Q851
PB 5V
Q807,808 SECAM PAL
H:LP M:SP L:ME.S
PB C
LPF
REC
ACC AMP
ACC DET
MAIN CONV
FL801 4.43MHz BPF
2H COMB DRIVE
Q805 BUFFER
DL801 2H COMB FILTER
PB/REC
PB KILLER AMP
CHROMA
RV801 REC C LEVEL
REC KILLER AMP
PB (SP)
PB (EP/LP)
Vcc
SW 5V
IC801 ② REC
1.2Vp-p
C ROT SWP (1H,CH1,L,CH2)
321fH VCO
1/8
COUNTER
PB APC DET
REC AFC DET
ID DET
COLOR KILLER DET
PB DISCRI
COMP SYNC
CR DET
PHASE SHIFT
SUB CONV
4.43MHz VXO
REC APC DET
3fsc GEN
X801 4.43MHz
Q809 SWITCH
FL602 5.06MHz BPF
FL803 3 FSC BPF
Q812 3 FSC AMP
AFC/APC TIME CONSTANT
Q804 REC/PB SWITCH
PB 5V (Q851)
Q806 LP/SP SWITCH
LP/SP (CN801 ⑪)
0.46Vp-p
4.43MHz
IC801 ⑭ REC/PB
IC801 ② PB
0.7Vp-p
Q801 BUFFER
REC C
C SYNC 1 (H)
PB C
C ROT
RP-100 BOARD (See Page 64)
IC001
VIDEO REC/PB AMP
CN002
SP REC CUR
CN001
VIDEO HEAD
SP CH1
SP CH2
LP
COMP
MODE CONTROL LOGIC
TO EACH SWITCHES
AMP
PRE AMP Vcc
MAIN Vcc
SW 5V
LP REC CUR
RF SWP
PB RF
HPF
Q002,003,005 EQUALIZER AMP
Q004 SP/LP EQ SW
SP/LP
RF AGC
AGC DET
REC/PB DET
Q006 REC/PB SW
Q007 REC CURRENT SW
MIX
C ROT
AMS
COMP SYNC
SW25
SP/LP
REC RF
REC C
REC P
HEAD SEL
SLOW
CN004
CN003
LP HEAD
SYSTEM CONTROL (MA-88)
SERVO (MA-88)
CN704
PB RF
IC001 ㉓ PB
0.42Vp-p
IC001 ⑲ PB
0.4Vp-p
0.22μsec
IC001 ⑱ REC
0.2Vp-p
0.22μsec
IC001 ㉖ REC/PB
2.5Vp-p
2V
IC801 ⑤ PB
0.1Vp-p
IC801 ④ REC
0.3Vp-p
IC801 ⑲ REC/PB
4.4Vp-p
2V

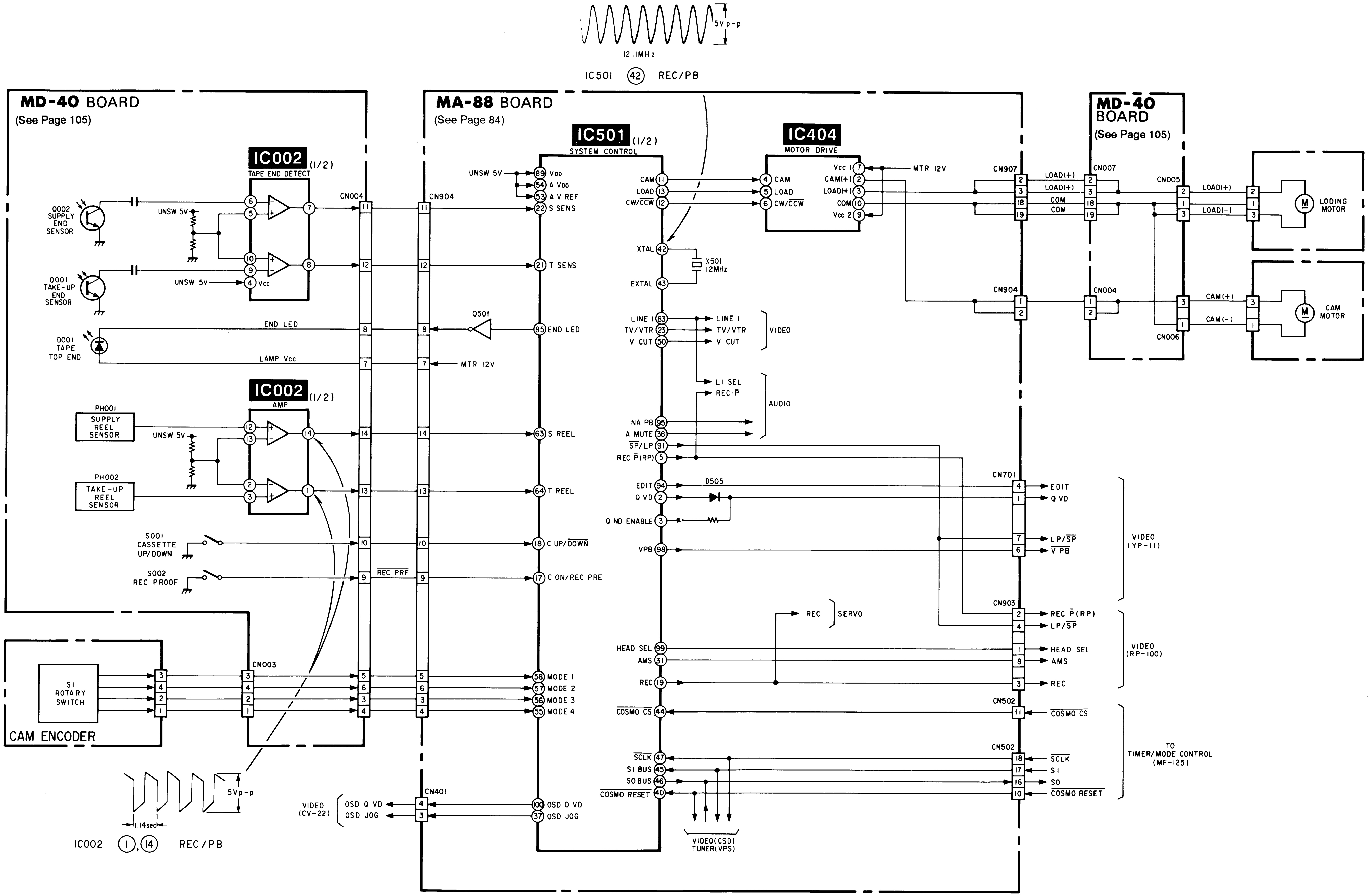

(See Page 84)
MA-88 BOARD
(See Page 111)
MF-125 BOARD
(See Page 114)
MF-126 BOARD
SLV-315VP
RV051 SHARPNESS
PAL MESECAM
S054 ME SE CAM PAL
SHARDNESS
CN701
CN702
CN501
CN502
MESECAM
EXCEPT VP
1.2Vp-p
IC701 (48) PB
V OUT
VIDEO OUT
EDIT
QVD
ED
EDIT
VPB
LP/SP
SYSTEM CONTROL (MA-88)
VIDEO IN
CN401
SECAM/PAL
V IN
V OUT
CV-22 BOARD
(See Page 98)
IC401
ON SCREEN DISPLAY
4.43MHz BPF
2.5Vp-p
17.7MHz
IC401 (29) REC/PB
X651 17MHz
AFC OSC
DIVID
BACK GROUND VIDEO GEN
BLANK
INT
EXT
CHRACTOR MIX
CHRACTOR GENERATOR
7MHz OSC
Q405
MUTE
Q403,404
SYNC TIP CLAMP
SECAM CHROMA BPF
Q402
SLV-315VP
D402
D401,403
Q410
BUFFER
IC490
RV491 AFC
Q451
BUFFER
SYNC SEP
AFC
HD
VD SEP
VD
Q406,407
H SYNC DETECT
5.2Vp-p
IC401 (30) REC/PB
4.5Vp-p
IC401 (31) REC/PB
2Vp-p
IC401 (12),(13) PB
2.2Vp-p
IC401 (12),(13) REC
CN402
SCLK
SI
CG CS
COSMO RESET
OSD JOG
OSD QVD
SYSTEM CONTROL (MA-88)
H DET
CN502
CN501
TIMER/MODE CONTROL (MF-125)
TUNER VIDEO
MOD VIDEO
TUNER (MA-88)
UNSW 12
Q204,205
SYSTEM CONTROL
TV/VTR (IC501 (23))
EXCEPT CP
CN201 EURO-AV
0.18Vp-p
CN702
V.RF ENVELOP
CN701
RF SWP
C SYNC 2 (V)
V SYNC
SERVO (MA-88)
CN703
CN801
LP/SP
VPB
Q851
PB 5V
Q807,808
PB/REC
PB KILLER AMP
CHROMA
SW 5V
Vcc
1.2Vp-p
(2) REC
COMP SYNC
0.7Vp-p
IC801 (2) PB
Q804
REC/PB SWITCH
PB 5V (Q851)
LP/SP (CN801 (11))
0.44Vp-p
IC801 (21) PB
Q220,226
BUFFER
Q203
BUFFER
IC201
LINE
TUNER
MUTE
Q201
BUFFER
+2.5V
1Vp-p
IC201 (14) REC
SYSTEM CONTROL
(IC501 (50)) V CUT
(IC501 (83)) LINE 1
SLV-315/315UB/315VP/315EI
2Vp-p
IC101 (11) PB
SLV-315 CP
CN602
CN122
B
G
R
CN601
CN101
IC101
L1 V IN
TUNER V IN
C+ TU V OUT
C+ V OUT
YC V IN
TV
VTR
OFF
C+ON
DIR
YC
Q101,103
BUFFER
Q102
Q180
BUFFER
Q126,127
CN103
CN121
V OUT
V IN
CONTROL
CNJ120 CANAL PULS
CP-53 BOARD
(See Page 96)
CN501
C+ DET
C+ ON
RGB CTRL
AV CTL
TUNER SEL
OUT SEL
TUNER MODE CONTROL (MF-125)
CN603
CN102
(5)
(See Page 95)
CP-52 BOARD
(11) (12) 2Vp-p
(5) 1Vp-p
IC101 (5),(11),(12) REC
SLV-315 CP

3-4. SERVO BLOCK DIAGRAM


2.6Vp-p
6.5msec
IC004 (15) REC/PB
5.2Vp-p
6.5msec
IC005 (1) REC/PB
5.2Vp-p
2V
IC005 (7) REC/PB
5Vp-p
2V
IC501 (68) REC/PB
DRUM MOTOR
M1
M2
M3
HALL DEVICE
HE+
HE−
Vcc
CAPSTAN MOTOR
RM001
CFG1
CFG2
MD-40 BOARD
(See Page 105)
IC004 (1/2)
DRUM FG/PG DETECT
CN001
M1
M2
M3
HE+
HE−
Vcc
FG/PG
SW 5V
IC005
FG/PG SEP
SW5V
CN004
D PG
D FG
CN002
CN007
MA-88 BOARD
(See Page 84)
5.2Vp-p
6.5msec
IC501 (69) REC/PB
CN904
IC501 (1/2)
SERVO
DRUM PG
DRUM FG
IC402 (1/2)
CONSTANT VOLTAGE
SW 5V
REF 2.5V
IC101 (1/2)
AMP
WAVE SHAPER
FG 1
FG 2
CN907
CAP FG
1Vp-p
1.5kHz
IC101 (18) REC/PB
IC401 (1/2)
DRUM D/A
CN907
DV S
REF2.5V
CAP STOP
IC401 (1/2)
CAP D/A
CAP VS
Q401
Q402
MTR 12V
STEP DRIVE
CAP V
STEP PLS
CAP RVS
SW POSITION
RV501
SW POSITION
V RF ENVELOP
RF SW P
CN702
CN701
CN903
V R
RF
V S
RF
5Vp-p
2V
IC501 (1) REC/PB
CN102
PB CTL
IC101
CTL HEAD CONTROL
CTL AMP
STEP
STEP
5.2Vp-p
0.65msec
IC501 (70) REC/PB
TP501
REC CTL
PECK DET
RTG MMV
CTL HEAD
CN101
CTL (Y)
CTL (X)
PB CTL AMP
GCA
PB CTL AMP
PB: ON
LEVEL DET
PCTL LOGIC
PB CTC
VD CTL
PB CTL
CTL INV
CTL INV
REC
REC
REC CTL GEN
TIMING GEN
REC CTL
REC/PB
3 STATE DET
RC IN
RC IN
CTL BIAS (2.4V)
5Vp-p
V
IC501 (66) REC/PB
V SYNC
6.5Vp-p
2V
IC101 (7) REC
5Vp-p
2V
IC101 (10) REC, IC501 (67) REC/PB


5.2Vp-p
2V
IC005 (7) REC/PB
5Vp-p
2V
IC501 (68) REC/PB
MA-88 BOARD
(See Page 84)
5.2Vp-p
6.5msec
IC501 (69) REC/PB
IC501 (1/2)
SERVO
CN904
16
19
68 DRUM PG
69 DRUM FG
IC402 (1/2)
CONSTANT VOLTAGE
SW 5V
REF 2.5V
IC101 (1/2)
CN907
FG 1
FG 2
AMP
WAVE SHAPER
70 CAP FG
1Vp-p
1.5kHz
IC101 (18) REC/PB
IC401 (1/2)
DRUM D/A 74
CAP STOP 71
STEP
24 STEP
5.2Vp-p
0.65msec
IC501 (70) REC/PB
TP501
7 REC CTL
77 VD CTL
67 PB CTL
PB CTC
CTL INV
28 CTL INV
REC
19 REC
RC IN
9 RC IN
CAP D/A 73
Q401
CAP V 59
STEP PLS 35
CAP RVS 72
SW POSITION 62
RV501
SW POSITION
MTR 12V
Q402
STEP DRIVE
5Vp-p
V
IC501 (66) REC/PB
66 V SYNC
V RF ENVELOP 60
RF SW P 1
5Vp-p
REC/PB
CN907
DV S
REF 2.5V
CAP VS
CN702
V RF ENVELOP
CN701
RF SWP
V SYNC
VIDEO (YP-11)
CN903
RF SWP
VIDEO (RP-100)
5Vp-p
2V
IC501 (1) REC/PB
MD-40 BOARD
(See Page 105)
IC004 (1/2)
DRUM MOTOR DRIVE
CN007
6 ETR
7 ET/DS
M1
M2
M3
VM
CN001
MTR 12V
DRUM MOTOR
M1
M2
M3
CAPSTAN MOTOR
IC001
CN002
C VS
12 VC
MTR 12V
SW 5V
LIMIT
C RVS
11 FRC
U
V
W
U(+)
U(-)
V(+)
V(-)
W(+)
W(-)
VH(+)
VH(-)
HALL DEVISE

3-5. SYSTEM CONTROL BLOCK DIAGRAM



5Vp-p
12.1MHz
IC501 (42) REC/PB
MD-40 BOARD
(See Page 105)
IC002 (1/2)
TAPE END DETECT
Q002 SUPPLY END SENSOR
Q001 TAKE-UP END SENSOR
UNSW 5V
Vcc
D001 TAPE TOP END
END LED
LAMP Vcc
CN004
IC002 (1/2)
AMP
PH001 SUPPLY REEL SENSOR
PH002 TAKE-UP REEL SENSOR
S001 CASSETTE UP/DOWN
S002 REC PROOF
REC PRF
CAM ENCODER
S1 ROTARY SWITCH
CN003
5Vp-p
1.14sec
IC002 (1),(14) REC/PB
MA-88 BOARD
(See Page 84)
CN904
Q501
MTR 12V
IC501 (1/2)
SYSTEM CONTROL
UNSW 5V
VDD
A VDD
A V REF
S SENS
T SENS
END LED
S REEL
T REEL
C UP/DOWN
C ON/REC PRE
MODE 1
MODE 2
MODE 3
MODE 4
OSD Q VD
OSD JOG
CN401
VIDEO (CV-22)
CAM
LOAD
CW/CCW
XTAL
EXTAL
X501 12MHz
LINE 1
TV/VTR
V CUT
VIDEO
LI SEL
REC·P
AUDIO
NA PB
A MUTE
SP/LP
REC P (RP)
EDIT
Q VD
D505
Q ND ENABLE
VPB
REC
SERVO
HEAD SEL
AMS
REC
COSMO CS
SCLK
SI BUS
SO BUS
COSMO RESET
VIDEO(CSD) TUNER(VPS)
IC404
MOTOR DRIVE
Vcc 1
CAM(+)
LOAD(+)
COM
Vcc 2
MTR 12V
CN907
CN904
CN701
EDIT
Q VD
LP/SP
V PB
VIDEO (YP-11)
CN903
REC P (RP)
LP/SP
HEAD SEL
AMS
REC
VIDEO (RP-100)
CN502
COSMO CS
SCLK
SI
SO
COSMO RESET
TO TIMER/MODE CONTROL (MF-125)
MD-40 BOARD
(See Page 105)
CN007
CN004
LOAD(+)
LOAD(+)
COM
COM
CN005
LOAD(+)
LOAD(-)
LODING MOTOR
CAM(+)
CAM(-)
CN006
CAM MOTOR
M

3-6. SYSTEM CONTROL MICROCOMPUTER (CXP80624:IC501 on MA-88 Board) PORT FUNCTION DESCRIPTION

PIN No.	PORT	I/O	SIGNAL	DESCRIPTION
1	PPO 13	O	RF SWP	RF switching pulse
2	PPO 12	O	Q VD	Quasi VD signal
3	PPO 11	O	Q HD ENBL	Quasi HD enable signal
4	PPO 10	O	$\overline{\text{AF REC}\cdot\text{P}}$	Not Used (OPEN)
5	PPO 9	O	REC•$\overline{\text{P}}$ (RP)	REC:H
6	PPO 8	O	—	Not Used (OPEN)
7	RTO 7	O	REC CTL	REC CTL signal
8	PC 6	O	COLOR CNT	Not Used (OPEN)
9	PC 5	O	RC IN	REC:REC CTL, others:HI-Z
10	PC 4	O	—	Not Used (OPEN)
11	PC 3	O	CAM	Cam motor select signal
12	PC 2	O	CW/CCW	Rotation direction set
13	PC 1	O	LOAD	Loading motor select signal
14	PPO 16	O	AF. SWP	Not Used (OPEN)
15	PJ 7	O	$\overline{\text{STEREO}}$	Not Used (OPEN)
16	PJ 6	O	$\overline{\text{BILING}}$	Not Used (OPEN)
17	PJ 5	I	C ON/REC PRF	Cassette on/rec proof switch
18	PJ 4	I	C UP/DOWN	Cassette up/down switch
19	PJ 3	O	REC	REC:H
20	PJ 2	O	V MUTE	Not Used (OPEN)
21	PJ 1	I	T SENS	T end sensor
22	PJ 0	I	S SENS	S end sensor
23	PD 7	O	$\overline{\text{TV}}$/VTR	TV/VTR switch VTR:H
24	PD 6	O	STEP	H when step is operation
25	PD 5	O	—	Not Used (OPEN)
26	PD 4	O	– –	Not Used (OPEN)
27	PD 3	O	NA REC $\overline{\text{P}}$	Not Used (OPEN)
28	PD 2	O	CTL INV	CTL inversion signal
29	PD 1	O	MONI (R)	Not Used (OPEN)
30	PD 0	O	MONI (L)	Not Used (OPEN)
31	PH 7	O	AMS	AMS control (O.D)
32	PH 6	O	$\overline{\text{HIFI MIX}}$	Not Used (OPEN) (O.D)
33	PH 5	O	—	Not Used (OPEN) (O.D)
34	PH 4	O	—	Not Used (OPEN) (O.D)
35	PH 3	O	STEP PLS	Step pulse output (O.D)
36	PH 2	O	$\overline{\text{FULL ERASE}}$	Not Used (OPEN) (O.D)
37	PH 1	O	OSD JOG	Variable speed playback:Hiz (O.D)
38	PH 0	O	A MUTE	MUTE:HiZ (O.D)
39	MP	O	—	~GND
40	$\overline{\text{RST}}$	I/O	$\overline{\text{COSMO RESET}}$	RESET:L
41	Vss			~GND
42	XTAL			12 MHz
43	EXTAL			12 MHz
44	$\overline{\text{CSO}}$	I	$\overline{\text{COSMO CS}}$	
45	$\overline{\text{SIO}}$	I	SI BUS	Serial data (TIMER → SYSCON)
46	$\overline{\text{SOO}}$	O	SO BUS	Serial data (SYSCON → TIMER)
47	$\overline{\text{SCKO}}$	I/O	$\overline{\text{SCLK}}$	Serial data transfe clock
48	AN 11	I	METER (L)	Not Used (~47KΩ ~GND)
49	AN 10	I	METER (R)	Not Used (~47KΩ ~GND)

PIN No.	PORT	I/O	SIGNAL	DESCRIPTION
50	PF 5	O	VCUT	V CUT:L
51	AN 8	I	AF SW POSI	Not Used (~47kΩ ~GND)
52	AVss			~GND
53	AVref			~+5V
54	AVDD			~+5V
55	PF 3	I	MODE 4	MD encorder input
56	PF 2	I	MODE 3	
57	PF 1	I	MODE 2	
58	PF 0	I	MODE 1	
59	AN 3	I	CAP V	Capstan drive voltage feedback input for capstan constant voltage drive.
60	AN 2	I	V RF ENVELOP	Video RF envelope signal for auto tracking
61	AN 1	I	AF ENVELOP	Not Used (~47kΩ ~GND)
62	AN 0	I	SW POSI	Switching position adjustment
63	PG 7	I	S REEL	Supply reel FG signal
64	PG 6	I	T REEL	Take-up reel FG signal
65	PG 5	I	DEW	Not Used (~47kΩ ~+5V)
66	SYNCO	I	V SYNC	Vertical sync input for servo operation. etc
67	$\overline{\text{PBCTL}}$	I	$\overline{\text{PB CTL}}$	PB CTL signal for capstan phase servo
68	D PG	I	DRUM PG	DRUM PG signal for drum phase servo
69	D FG	I	DRUM FG	DRUM FG signal for drum speed servo
70	C FG	I	CAP FG	CAPSTAN FG signal for capstan speed servo
71	PE 7	O	CAP STOP	Capstan stop:H
72	PE 6	O	CAP REV	Capstan reverse:H
73	DAA 1	O	CAP D/A	Capstan error output
74	DAA 0	O	DRUM D/A	Drum error output
75	PE 3	O	SKEW ON	Not Used (OPEN)
76	PE 2	O	—	Not Used (OPEN)
77	$\overline{\text{EC}}$	I	VD CTL	VD CTL signal for counter
78	PE 0	I	TEST	Not Used (~47kΩ ~+5V)
79	SI 1	I	SI 2	Not Used (~47kΩ ~+5V)
80	SO 1	O	SO 2	Not Used (~47kΩ ~+5V)
81	SCK 1	I/O	$\overline{\text{S CLK}}$	Not Used (~47kΩ ~+5V)
82	INT 1	I	INDEX CS	Not Used (~47kΩ ~+5V)
83	PI 3	O	LINE 1	LINE:H, TUNER:L
84	PI 2	O	LINE 2	Not Used (OPEN)
85	PI 1	O	END LED	Tape end sensor LED drive signal
86	PCK	I	OSC 1	Not Used (~47kΩ ~GND)
87	PK 0	I	OSC 0	Not Used (~47kΩ ~GND)
88	Vss			~GND
89	VDD			~+5V
91	PA 7	O	LP/$\overline{\text{SP}}$	LP:H, SP:L
92	PA 6	O	—	Not Used (OPEN)
93	PA 5	O	LP HEAD	Not Used (OPEN)
94	PA 4	O	EDIT	EDIT:H
95	PA 3	O	NA PB	Normal audio playback:H
96	PA 2	O	$\overline{\text{AF PB}}$	Not Used (OPEN)
97	PA 1	O	$\overline{\text{JOG}}$	Not Used (OPEN)
98	PA 0	O	$\overline{\text{V PB}}$	Video playback:L
99	PPO 15	O	HEAD SEL	Video head select signal
100	PPO 14	O	OSD Q VD	Quasi VD signal for OSD

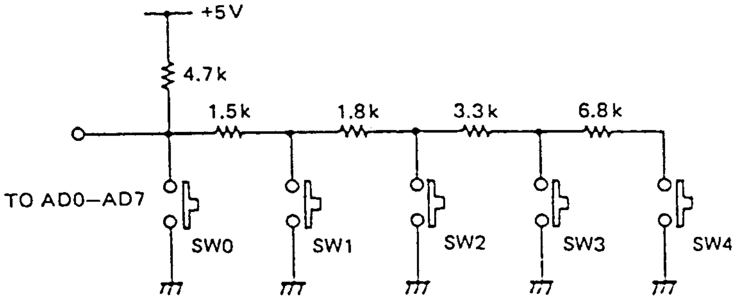
3-7. TIMER/MODE CONTROL MICROCOMPUTER (CXP50116:IC001 on MF-125 Board) PORT FUNCTION DESCRIPTION

PIN No.	PORT	I/O	SIGNAL	DESCRIPTION
1	S4	O	S0	FIP segment signal
2	S5	O	S1	
3	S6	O	S2	
4	S7	O	S3	
5	S8	O	S4	
6	S9	O	S5	
7	S10	O	S6	
8	S11	O	S7	
9	S12	O	S8	
10	S13	O	S9	
11	S14	O	S10	
12	S15	O	S11	
13	S16	O	S12	
14	S17	O	S13	
15	S18	O	S14	
16	S19	O	S15	
17	S20	O	S16	
18	S21	O	S17	Not Used
19	S22	O	S18	
20	S23	O	S19	
21	T7	O	T7	
22	T6	O	T6	FIP grid signal
23	T5	O	T5	
24	T4	O	T4	
25	T3	O	T3	
26	T2	O	T2	
27	T1	O	T1	
28	T0	O	T0	
29	INT	I		Interruption from externals (Not Used)
30	TX	O	TX	Backup clock output
31	TEX	I	TEX	Backup clock input (32.768 kHz)
32	$\overline{\text{RESET}}$	I	$\overline{\text{RESET}}$	Reset input
33				
34	VDD	–	VDD	Positive power supply terminal
35	AD 0	I	AD 0	Key input reading A/D (including shuttle switch)
36	AD 1	I	AD 1	
37	AD 2	I	AD 2	
38	AD 3	I	AD 3	
39	AD 4	I	AD 4	
40	AD 5	I	AD 5	
41	AD 6	I	AD 6	
42	AD 7	I	AD 7	
43	$\overline{\text{EC}}$	I		Event count input (Not used)
44	$\overline{\text{SC}}$	O	$\overline{\text{SCLK}}$	Serial bus clock output
45	SO	O	SO (from TT)	Serial bus SOUT
46	SI	I	SI (to TT)	Serial bus SIN
47	PA 0	I/O	MEM DATA	EEPROM data signal
48	PA 1	I	SECAM/$\overline{\text{PAL}}$	Not Used
49	PA 2	I	MESECAM	Not Used

PIN No.	PORT	I/O	SIGNAL	DESCRIPTION
50	PA 3	O	$\overline{\text{VPS CS}}$	VPS chip select signal
51	PF 0	O	$\overline{\text{VPS RESET}}$	VPS RESET signal
52	PF 1	O	$\overline{\text{COSMO CS}}$	COSMO CS signal
53	PF 2	O	$\overline{\text{COSMO RESET}}$	COSMO RESET signal
54	PF 3	O	$\overline{\text{CG CS}}$	CG CS signal
55	PE 0	O	PLL ENABLE	FS tuner enable output
56	PE 1	O	PLL CLOCK	FS tuner clock output
57	PE 2	O	PLL DATA	FS tuner data output
58	PE 3	O	BAND SEL	Tuner band select (Not Used)
59	PY 0	O	TV SYSTEM	TV SYSTEM select
60	PY 1	O	BUZZER	Buzzer signal
61	PY 2	I	POWER FAIL	Service interruption detection
62	PY 3	I	SIRCS IN	Remote control input
63	PD 0	I	AFT DOWN	Tuner AFT UP/DOWN signal
64	PD 1	I	AFT UP	
65	PD 2	I	$\overline{\text{HDET}}$	VIDEO H sync DETECT input
66	PD 3	I	C+DET	C+ DETECT input
67	PC 0	O	C+ON	C+ ON/OFF
68	PC 1	O	OUT SEL	AV output select
69	PC 2	O	TUNER SEL	TUNER select
70	PC 3	O	RGB CTRL	RGB control
71	Vss	–	Vss	GND
72	XTAL	O	XTAL	Clock output
73				
74	EXTAL	I	EXTAL	Clock input (4.194304 MHz)
75	VREF	I	VREF	Reference voltage for resetting circuit (to VDD)
76	VFDP	I	VFDP	Power supply for FIP
77	PH 0	O	AV CTRL	AV control
78	PH 1	O	POWER CTRL	POWER control signal
79	PH 2	O	MEM CLK	EEPROM clock signal
80	PH 3	O	MEM CS	EEPROM CS signal

A/D PORT ALLOCATION

- The A/D ports are allocated as shown below.



SW AD	PIN No.	SW0 0.00[V]	SW1 1.21[V]	SW2 2.06[V]	SW3 2.92[V]	SW4 3.70[V]
AD 0	35	RING 0	TEST 1	TEST 2 (× 120)		
AD 1	36	RING 1				
AD 2	37	RING 2	CP		UB	VP
AD 3	38	FWD/RVS	PAUSE	H.S. REWIND		
AD 4	39	REC	AUTO/MANUAL	TRACKING (–)	PROGRAM (+)	TV/VTR
AD 5	40	TIMER ON/OFF	VPS	TRACKING (+)	PROGRAM (–)	
AD 6	41	QUICK TIMER		INPUT SELECT	EDIT	
AD 7	42	STOP	PLAY	POWER	EJECT	NORMAL (TONE)

- KEY input signals pass through the A/D ports as shown above.
- Chattering-cancel time is 30 msec. KEY input is assumed when there are two input signals of the same voltage within 30 msec.
- Discriminate the model (SLV-315, 315VP, 315UB, 315EI or 315CP) by using the AD2 port. However, when discriminate SLV-315 or 315EI, set the switch to OFF position.

3-8. SYSTEM CONTROL — VIDEO BLOCK INTERFACE

Signal Name	Pin No.	I/O	STOP/ FF/REW	TAPE LOADING	TAPE UN-LOADING	PB	PB· PAUSE	SLOW	× 2	CUE	REVIEW	REC	REC· PAUSE	−×1	−×2
$\overline{\text{V PB}}$	MA-88 BOARD IC501 (98)	O	H	H	H	L	L	L	L	L	L	H	H	L	L
HEAD SEL	MA-88 BOARD IC501 (99)	O	L	L	L	L	H	*1	H	L	L	H	H	L	H
RF SW P	MA-88 BOARD IC501 ①	O	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
Q VD	MA-88 BOARD IC501 ②	O	L	L	L	L	*4	*4	*4	*4	*4	L	L	*4	*4
EDIT	MA-88 BOARD IC501 (94)	O	L	L	L	*5	*5	*5	*5	*5	*5	*5	L	*5	*5
AMS	MA-88 BOARD IC501 ㉛	O	L	L	L	L	L	*6	L	*7	*7	L	L	*7	*7
$\overline{\text{SP}}$/LP	MA-88 BOARD IC501 (91)	O	*8	*8	*8	*9	*9	*9	*9	*9	*9	*8	*8	*9	*9
REC·$\overline{\text{P}}$	MA-88 BOARD IC501 ⑤	O	L	L	L	L	L	L	L	L	L	H	L	L	L
REC	MA-88 BOARD IC501 ⑲	O	L	L	L	L	L	L	L	L	L	H	H	L	L
V SYNC	MA-88 BOARD IC501 (66)	I	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10

*1. "H" when the tape stops, and "L" when it runs (for approx. 40 msec).
*2. Synchronized with drum rotation. 25 Hz 50% duty pulse.
*4. V-cycle "H" pulse.
*5. Normally "L". "H" during EDIT mode.
*6. HI-Z when the tape runs reverse during SP mode "L" the other conditions.
*7. HI-Z (2.5V) during SP mode, or "L" during LP mode.
*8. By SP/LP selector, "L" during SP mode, or "H" during LP mode.
*9. By the mode on the recorded tape, "L" when it is SP mode, or "H" when "LP" mode.
*10. Vertical sync signal (positive polarity).

3-9. SYSTEM CONTROL — SERVO PERIPHERAL CIRCUIT INTERFACE

Signal Name	Pin No.	I/O	STOP	FF	REW	TAPE LOADING	TAPE UN-LOADING	PB	PB·PAUSE	SLOW	×2	CUE	REVIEW	REC	REC·PAUSE
RC IN *1	MA-88 BOARD IC501 ⑨	O	Hiz	Hiz	Hiz	Hiz	Hiz	Hiz	Hiz	Hiz	Hiz	Hiz	Hiz	*1	Hiz
CAP STOP	MA-88 BOARD IC501 (71)	O	H	L	L	L	L	L	H	H	L	L	L	L	H
$\overline{\text{STEP PLS}}$	MA-88 BOARD IC501 ㉟	O	H	H	H	H	H	H	H	*2	H	H	H	H	H
CAP V *3	MA-88 BOARD IC501 (59)	I													
SW POSITION *4	MA-88 BOARD IC501 (62)	I													
$\overline{\text{PB CTL}}$	MA-88 BOARD IC501 (67)	I	H	*6	*6			*1	H/L	*2	*6	*6	*6	*1	L
VD CTL	MA-88 BOARD IC501 (77)	I	H	*6	*6			*1	H/L	*2	*6	*6	*6	*1	L
DRUM PG	MA-88 BOARD IC501 (68)	I	L	L	L	*5	*5	*7	*7	*7	*7	*7	*7	*7	*7
DRUM FG	MA-88 BOARD IC501 (69)	I	L	L	L	*5	*5	*8	*8	*8	*8	*8	*8	*8	*8
CAP FG	MA-88 BOARD IC501 (70)	I	H/L	*6	*6	*5	*5	*6	H/L	*9	*6	*6	*6	*6	H/L
CAP RVS	MA-88 BOARD IC501 (72)	O	H	L	H	L	H	L	L	*2	L	L	H	L	L
CAP DA *14	MA-88 BOARD IC501 (73)	O	*11	L	L	*11	*11	12	*11	*11	*12	*12	*12	*12	*11
DRUM DA *14	MA-88 BOARD IC501 (74)	O	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13
REC·$\overline{\text{P}}$	MA-88 BOARD IC501 ⑤	O	L	L	L	L	L	L	L	L	L	L	L	H	L
STEP	MA-88 BOARD IC501 ㉔	O	L	L	L	L	L	L	L	*15	L	L	L	L	L

*1. 25 Hz pulse. (Modified Rec CTL)
*2. "L" pulse when the tape runs.
*3. Input terminal for capstan constant-voltage drive.
Used in the FF/REW mode and for cassette loading/unloading.
*4. Input terminal for switching position adjustment.
*5. Indefinite cycle pulse.
*6. Cycle pulse proportional to a tape speed.
*7. 25 Hz "H" pulse.
*8. 150 Hz pulse.
*9. Tape run time pulse.
*10. V-cycle "L" pulse.
*11. "H" or "L" pulse in a cycle of approx. 2 msec.
*12. "H" or "L" pulse in a cycle of approx. 1.5 msec.
*13. "H" or "L" pulse in a cycle of approx. 3 msec.
*14. 3-value output of "H", "L" and HI-Z (2.5V).
*15. "H" pulse when the tape runs.

3-10. SYSTEM CONTROL — MECHANISM BLOCK INTERFACE

Signal Name	Pin No.	I/O	HI-SPEED REW	EJECTED	CASSETTE LOADING	CASSETTE UN-LOADING	TAPE LOADING	TAPE UN-LOADING	STOP	FF	REW	PB	PB·PAUSE	SLOW	×2	CUE	REVIEW	REC	REC PAUSE
CAM *1	MA-88 BOARD IC501 ⑪	O	L	L	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L
LOAD	MA-88 BOARD IC501 ⑬	O	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L
CW/$\overline{\text{CCW}}$	MA-88 BOARD IC501 ⑫	O			H	L	H	L											
MODE 1	MA-88 BOARD IC501 (58)	I	H	L	L	L	H	H	L	H	H	H	L	L	H	H	H	H	H
MODE 2	MA-88 BOARD IC501 (57)	I	L	H	H	H	H	H	L	L	L	L	H	H	L	L	L	L	H
MODE 3	MA-88 BOARD IC501 (56)	I	H	H	H	H	L	L	L	L	L	H	H	H	H	H	L	H	H
MODE 4	MA-88 BOARD IC501 (55)	I	H	H	H	H	H	H	L	H	H	L	L	L	L	L	L	L	L
REC PRF	MA-88 BOARD IC501 ⑰	I	*2	L	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
C-UP/$\overline{\text{DOWN}}$	MA-88 BOARD IC501 ⑱	I	L	H	H→L	H→L	L	L	L	L	L	L	L	L	L	L	L	L	L
T REEL	MA-88 BOARD IC501 (64)	I	*3	H/L	H/L	H/L	H/L	H/L	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
S REEL	MA-88 BOARD IC501 (63)	I	*3	H/L	H/L	H/L	*3	*3	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
END LED	MA-88 BOARD IC501 (85)	O	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4
CAP V	MA-88 BOARD IC501 (59)	I	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6
CAP STOP	MA-88 BOARD IC501 (71)	O	L	H			L	L	H	L	L	L	H	H	L	L	L	L	H
CAP RVS	MA-88 BOARD IC501 (72)	O	H	H			L	H	H/L	L	H	L	L	L	L	L	H	L	L
CAP DA *8	MA-88 BOARD IC501 (73)	O																	
T SENS	MA-88 BOARD IC501 ㉑	I	*7	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
S SENS	MA-88 BOARD IC501 ㉒	I	*7	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7

*1. "H" when progressing to the MECHA mode.
*2. "L" when a cassette erasure preventive finger is bent, and "H" when not bent.
*3. Cycle pulse proportional to a reel speed.
*4. "H" pulse in a cycle of approx. 2 msec.

*6. Input terminal for capstan constant-voltage drive.
Used in the FF/REW mode and for cassette loading/unloading.
*7. Normally "L", "H" pulse in a cycle of 2 msec. when tape top or tape end is detected.
*8. 3-value output of "H", "L" and HI-Z (2.5V).

3-11. SYSTEM CONTROL — SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE

Signal Name	Pin No.	I/O	I/O LEVEL
$\overline{\text{COSMO RESET}}$	MA-88 BOARD IC501 ㊵	I	Normally "H". Set to "L" when a power failure is delected or power is restored.
$\overline{\text{COSMO CS}}$	MA-88 BOARD IC501 ㊹	I	Chip select signal from the timer microcomputer (MF-125 board IC001). V-cycle "L" pulse.
SI BUS	MA-88 BOARD IC501 ㊺	I	Serial communication data from the timer microcomputer. V-cycle "L" pulse.
SO BUS	MA-88 BOARD IC501 ㊻	O	Serial communication data to the timer microcomputer. V-cycle "L" pulse.
$\overline{\text{S CLK}}$	MA-88 BOARD IC501 ㊼	O	Serial communication clock to the timer microcomputer. V-cycle "L" pulse.

3-12. SYSTEM CONTROL — AUDIO BLOCK INTERFACE

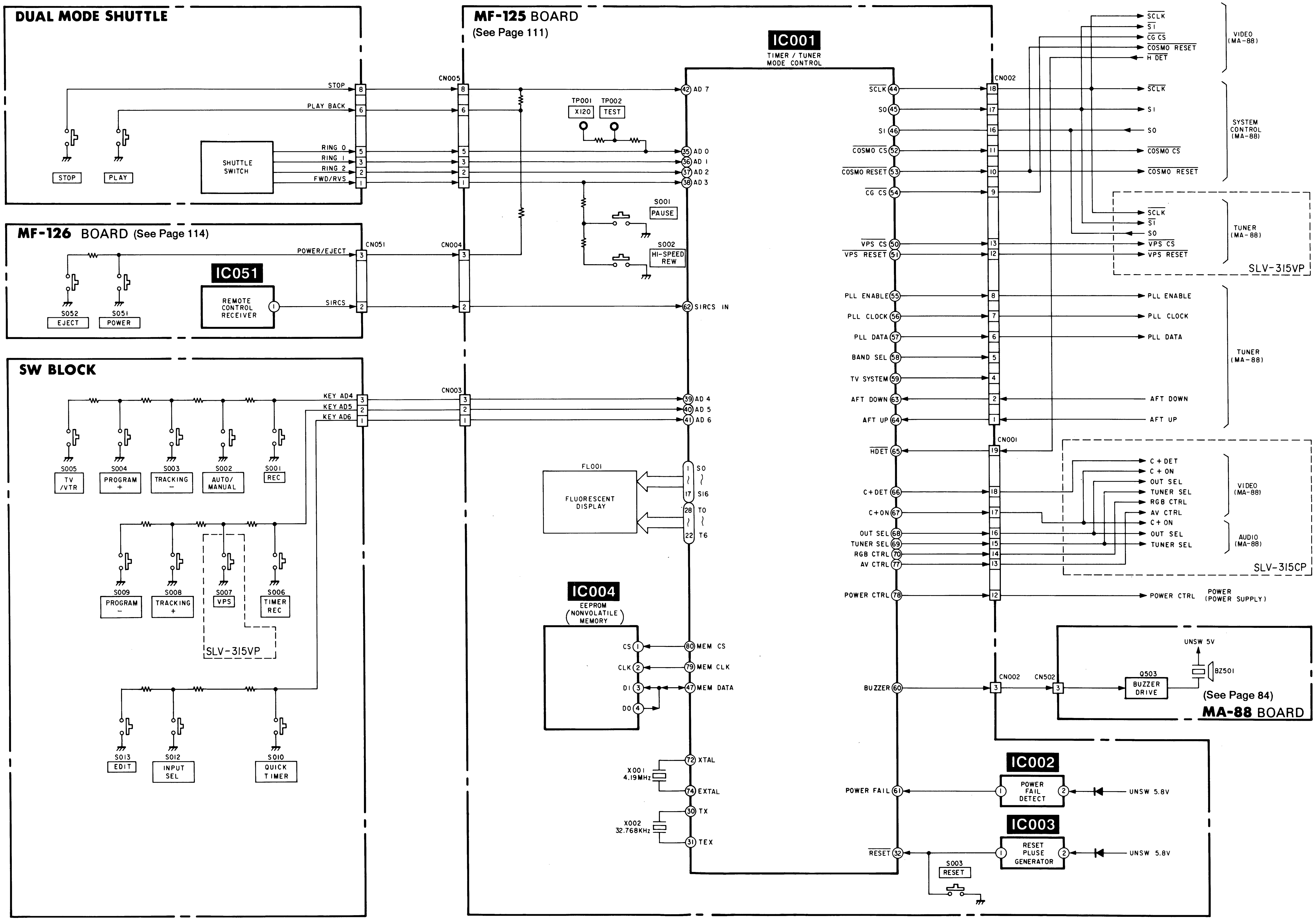
Signal Name	Pin No.	I/O	STOP/ FF/REW	TAPE LOADING	TAPE UN-LOADING	PB	PB· PAUSE	SLOW	×2	CUE	REVIEW	REC	REC PAUSE	−×1	−×2
NA·PB	MA-88 BOARD IC501 (95)	O	L	L	L	H	H	H	H	H	H	L	L	H	H
A MUTE	MA-88 BOARD IC501 ㊳	O	L	L	L	*1	H	H	H	H	H	L	L	H	H
$\overline{\text{SP}}$/LP	MA-88 BOARD IC501 (91)	O	*2	*2	*2	*3	*3	*3	*3	*3	*3	*2	*2	*3	*3
REC·$\overline{\text{P}}$	MA-88 BOARD IC501 ⑤	O	L	L	L	L	L	L	L	L	L	H	L	L	L

*1. "H" when CTL signal is not played back.

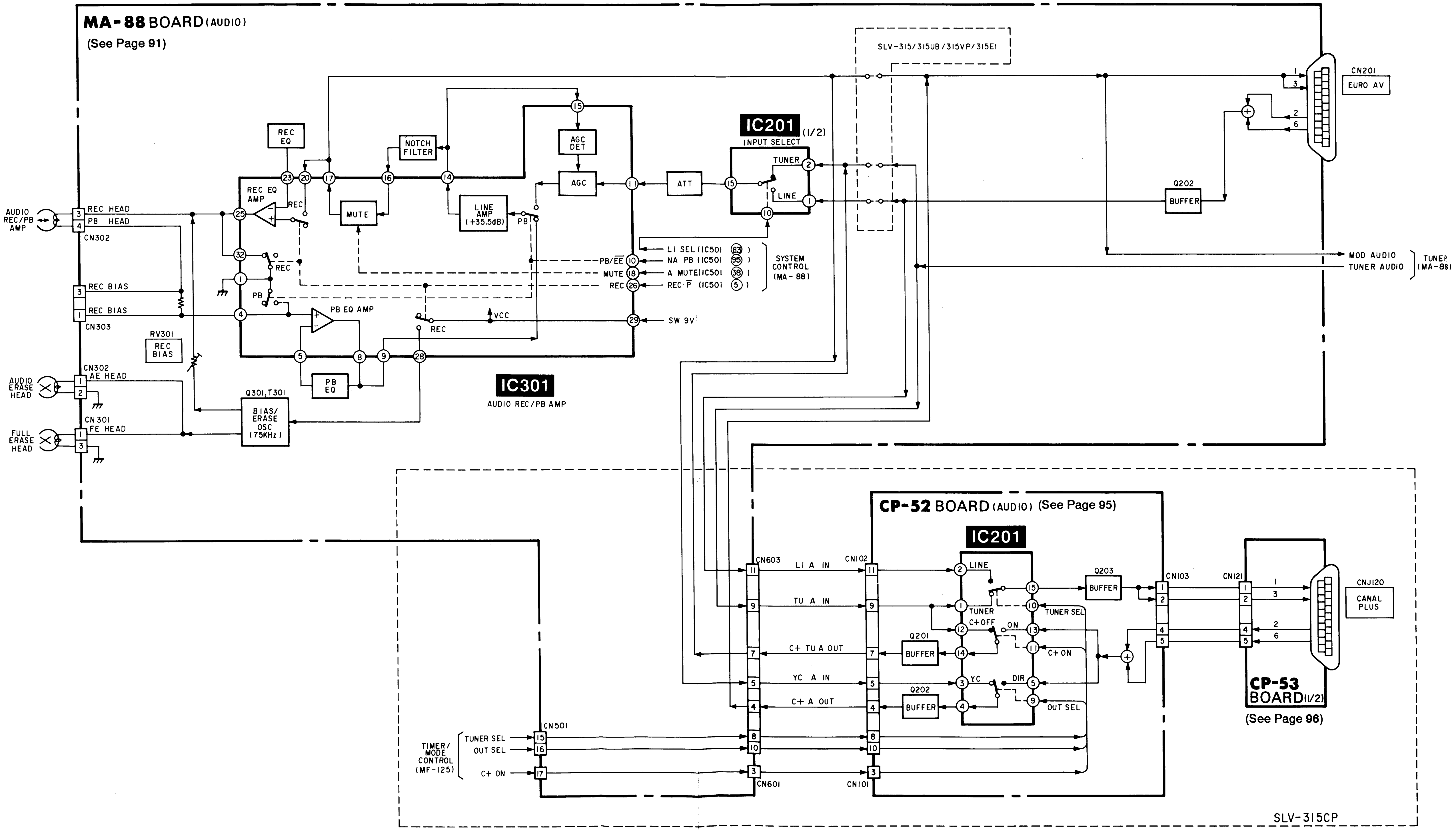
*2. By SP/LP selector, "L" during SP mode, or "H" during LP mode.

*3. By the mode on the recorded tape, "L" when it is SP mode, or "H" when "LP" mode.

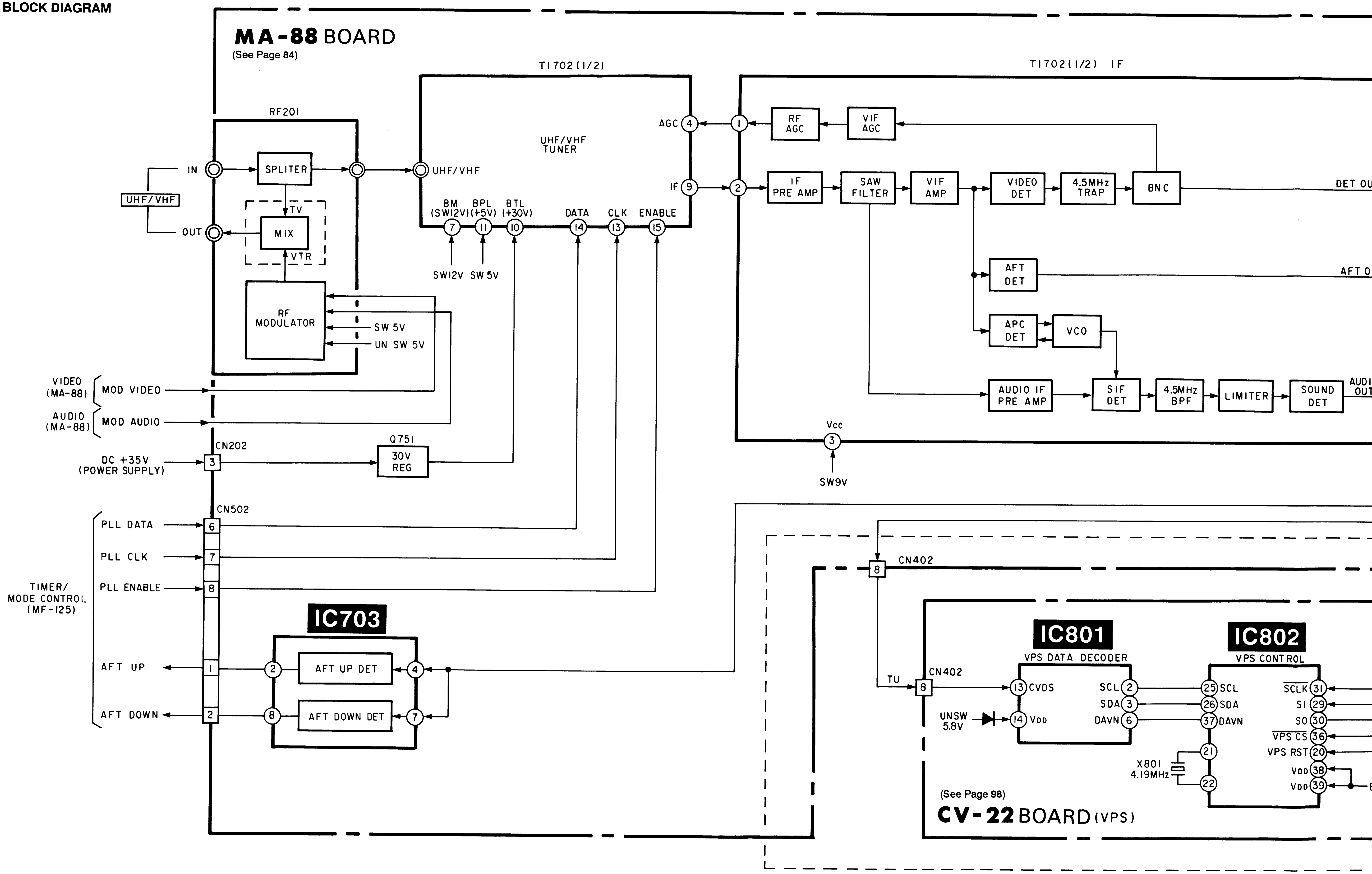
3-13. TIMER, MODE CONTROL BLOCK DIAGRAM

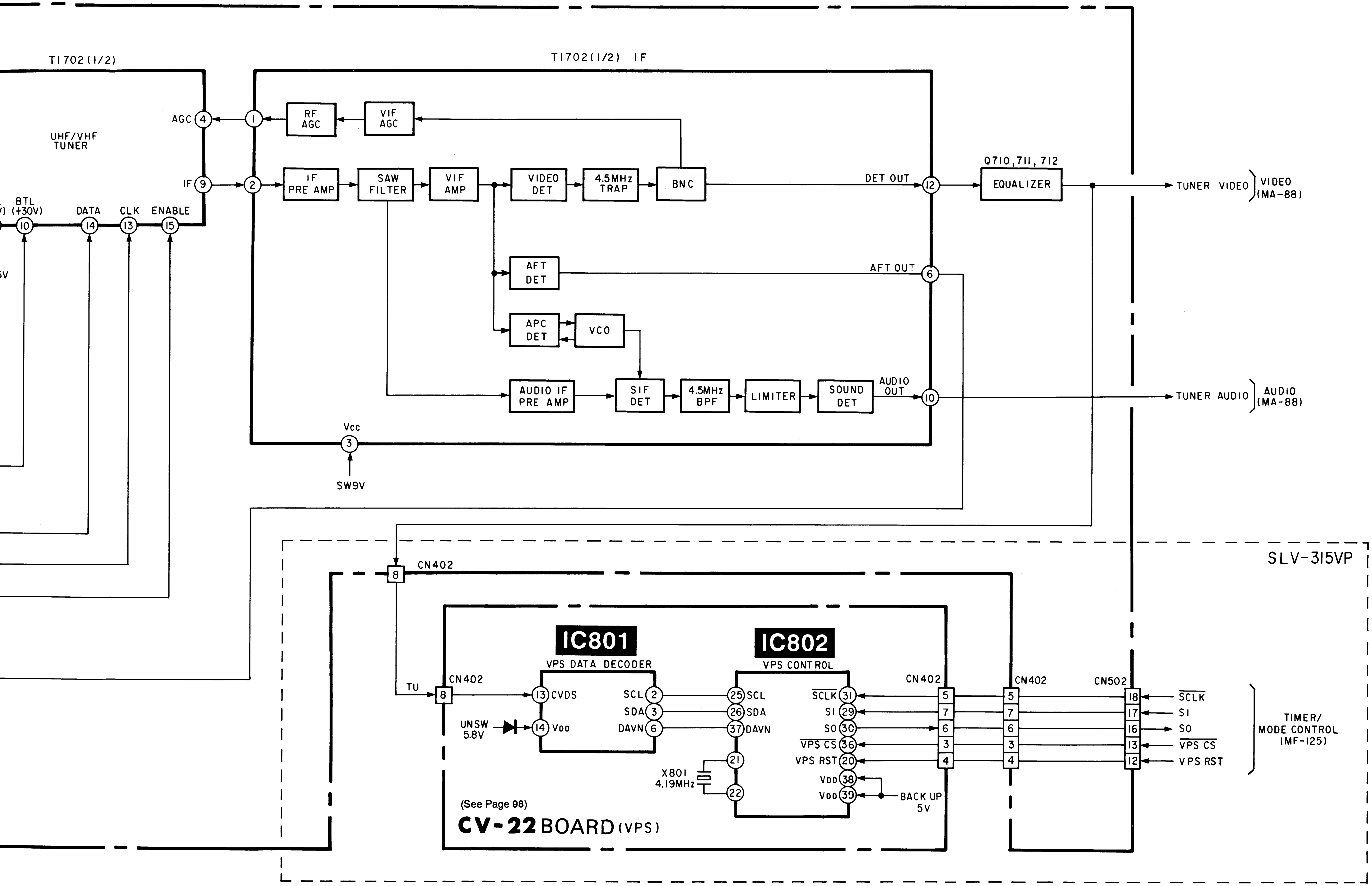

DUAL MODE SHUTTLE
STOP
PLAY BACK
STOP
PLAY
SHUTTLE SWITCH
RING 0
RING 1
RING 2
FWD/RVS
MF-126 BOARD (See Page 114)
POWER/EJECT
CN051
S052
EJECT
S051
POWER
IC051
REMOTE CONTROL RECEIVER
SIRCS
SW BLOCK
KEY AD4
KEY AD5
KEY AD6
S005
TV /VTR
S004
PROGRAM +
S003
TRACKING −
S002
AUTO/ MANUAL
S001
REC
S009
PROGRAM −
S008
TRACKING +
S007
VPS
S006
TIMER REC
SLV-315VP
S013
EDIT
S012
INPUT SEL
S010
QUICK TIMER
MF-125 BOARD
(See Page 111)
CN005
CN004
CN003
TP001
X120
TP002
TEST
S001
PAUSE
S002
HI-SPEED REW
IC001
TIMER / TUNER MODE CONTROL
AD 7
AD 0
AD 1
AD 2
AD 3
SIRCS IN
AD 4
AD 5
AD 6
FL001
FLUORESCENT DISPLAY
S0
S16
T0
T6
IC004
EEPROM (NONVOLATILE MEMORY)
CS
CLK
DI
DO
MEM CS
MEM CLK
MEM DATA
X001 4.19MHz
XTAL
EXTAL
X002 32.768KHz
TX
TEX
SCLK
SO
SI
COSMO CS
COSMO RESET
CG CS
VPS CS
VPS RESET
PLL ENABLE
PLL CLOCK
PLL DATA
BAND SEL
TV SYSTEM
AFT DOWN
AFT UP
HDET
C+DET
C+ON
OUT SEL
TUNER SEL
RGB CTRL
AV CTRL
POWER CTRL
BUZZER
POWER FAIL
RESET
CN002
CN001
SCLK
SI
CG CS
COSMO RESET
H DET
VIDEO (MA-88)
SCLK
SI
SO
COSMO CS
COSMO RESET
SYSTEM CONTROL (MA-88)
SCLK
SI
SO
VPS CS
VPS RESET
TUNER (MA-88)
SLV-315VP
PLL ENABLE
PLL CLOCK
PLL DATA
AFT DOWN
AFT UP
TUNER (MA-88)
C+DET
C+ON
OUT SEL
TUNER SEL
RGB CTRL
AV CTRL
VIDEO (MA-88)
C+ON
OUT SEL
TUNER SEL
AUDIO (MA-88)
SLV-315CP
POWER CTRL
POWER (POWER SUPPLY)
UNSW 5V
BZ501
Q503
BUZZER DRIVE
CN002
CN502
(See Page 84)
MA-88 BOARD
IC002
POWER FAIL DETECT
UNSW 5.8V
IC003
RESET PLUSE GENERATOR
UNSW 5.8V
S003
RESET

3-14. AUDIO BLOCK DIAGRAM

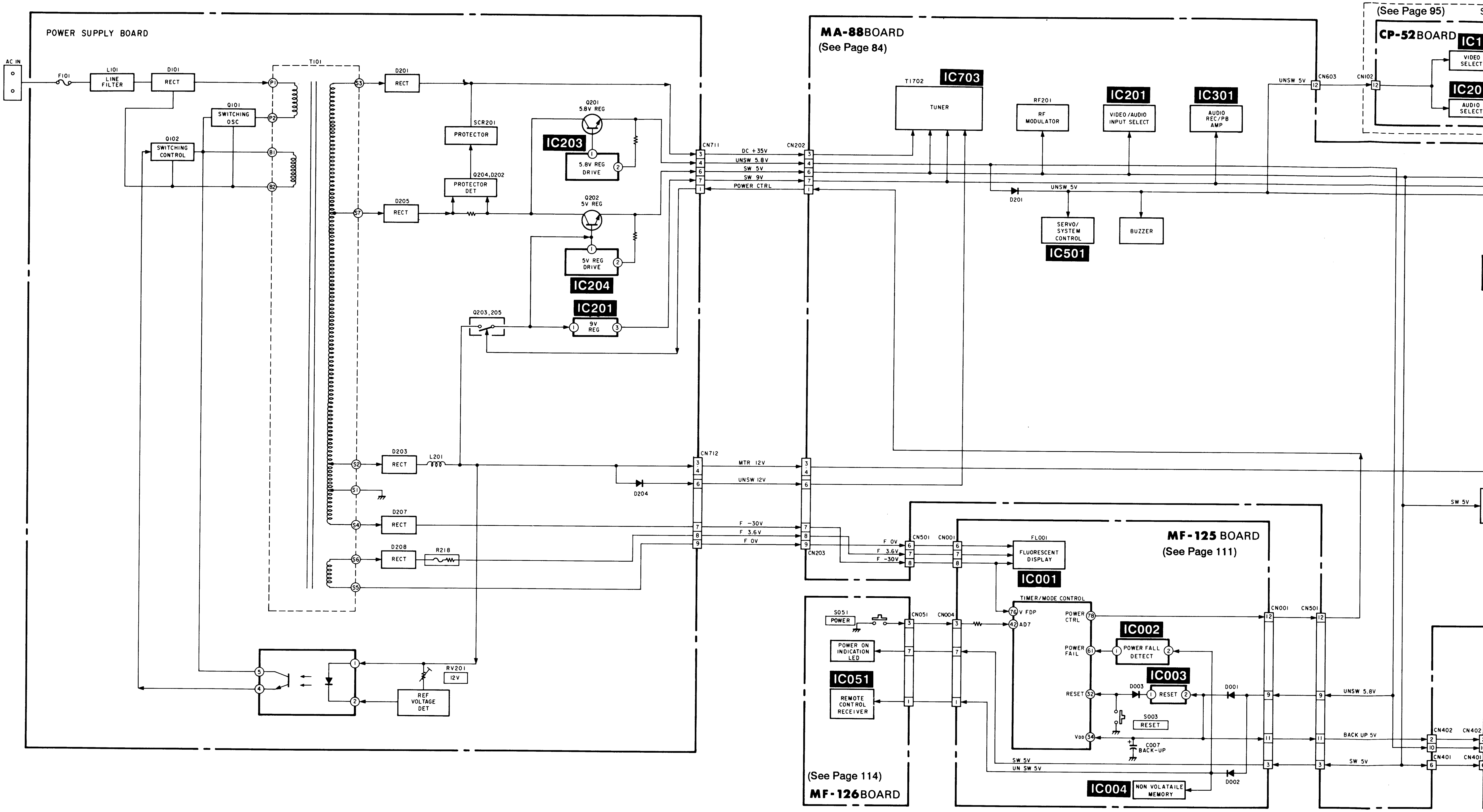

MA-88 BOARD (AUDIO)
(See Page 91)
AUDIO REC/PB AMP
REC HEAD
PB HEAD
CN302
REC BIAS
REC BIAS
CN303
RV301
REC BIAS
CN302
AE HEAD
AUDIO ERASE HEAD
CN301
FE HEAD
FULL ERASE HEAD
Q301,T301
BIAS/ ERASE OSC (75KHz)
REC EQ
REC EQ AMP
REC
PB
PB EQ AMP
PB EQ
NOTCH FILTER
MUTE
LINE AMP (+35.5dB)
AGC DET
AGC
ATT
VCC
IC301
AUDIO REC/PB AMP
PB/EE
MUTE
REC
SW 9V
LI SEL (IC501 83)
NA PB (IC501 95)
A MUTE (IC501 38)
REC·P (IC501 5)
SYSTEM CONTROL (MA-88)
IC201 (1/2)
INPUT SELECT
TUNER
LINE
SLV-315/315UB/315VP/315EI
Q202
BUFFER
CN201
EURO AV
MOD AUDIO
TUNER AUDIO
TUNER (MA-88)
CP-52 BOARD (AUDIO) (See Page 95)
IC201
CN603
LI A IN
TU A IN
C+ TU A OUT
YC A IN
C+ A OUT
CN102
LINE
TUNER
C+OFF
ON
C+ ON
YC
DIR
OUT SEL
TUNER SEL
Q201
BUFFER
Q202
BUFFER
Q203
BUFFER
CN103
CN121
CNJ120
CANAL PLUS
CP-53 BOARD (1/2)
(See Page 96)
TIMER/ MODE CONTROL (MF-125)
TUNER SEL
OUT SEL
C+ ON
CN501
CN601
CN101
SLV-315CP

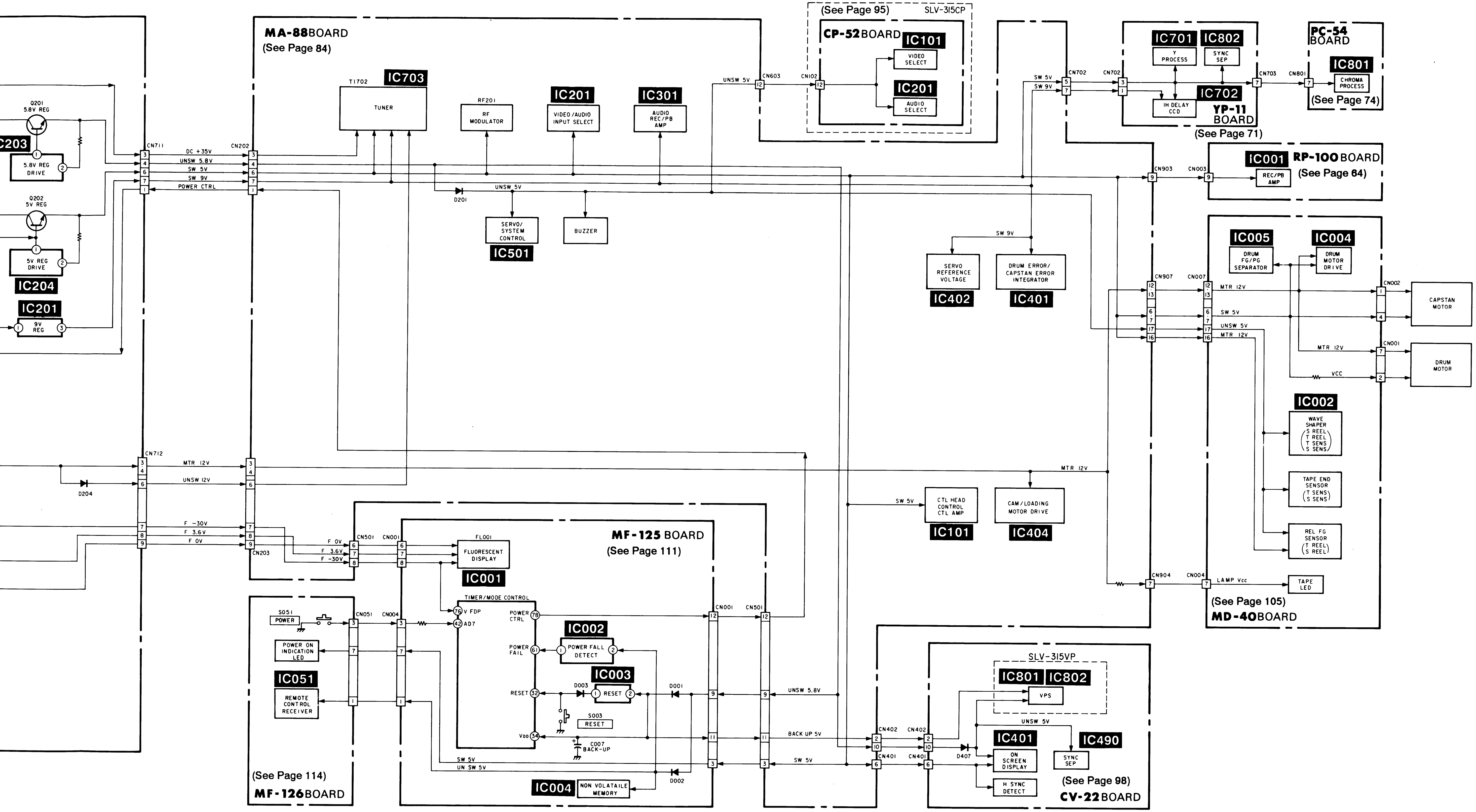
3-15. TUNER BLOCK DIAGRAM


MA-88 BOARD
(See Page 84)
RF201
IN
OUT
UHF/VHF
SPLITER
MIX
TV
VTR
RF MODULATOR
SW 5V
UN SW 5V
T1702(1/2)
UHF/VHF TUNER
UHF/VHF
AGC 4
IF 9
BM (SW12V) 7
BPL (+5V) 11
BTL (+30V) 10
DATA 14
CLK 13
ENABLE 15
SW12V
SW 5V
T1702(1/2) IF
RF AGC
VIF AGC
IF PRE AMP
SAW FILTER
VIF AMP
VIDEO DET
4.5MHz TRAP
BNC
DET OU
AFT DET
AFT O
APC DET
VCO
AUDIO IF PRE AMP
SIF DET
4.5MHz BPF
LIMITER
SOUND DET
AUDI OUT
Vcc 3
SW9V
VIDEO (MA-88)
MOD VIDEO
AUDIO (MA-88)
MOD AUDIO
CN202
DC +35V (POWER SUPPLY)
Q751
30V REG
CN502
PLL DATA
PLL CLK
PLL ENABLE
TIMER/ MODE CONTROL (MF-125)
AFT UP
AFT DOWN
IC703
AFT UP DET
AFT DOWN DET
CN402
TU
IC801
VPS DATA DECODER
13 CVDS
14 VDD
SCL 2
SDA 3
DAVN 6
UNSW 5.8V
IC802
VPS CONTROL
25 SCL
26 SDA
37 DAVN
21
22
X801 4.19MHz
SCLK 31
SI 29
SO 30
VPS CS 36
VPS RST 20
VDD 38
VDD 39
(See Page 98)
CV-22 BOARD (VPS)


TI702 (1/2)
UHF/VHF TUNER
AGC 4
IF 9
BTL (+30V) 10
DATA 14
CLK 13
ENABLE 15
TI702 (1/2) IF
1
2
RF AGC
VIF AGC
IF PRE AMP
SAW FILTER
VIF AMP
VIDEO DET
4.5MHz TRAP
BNC
DET OUT 12
AFT DET
AFT OUT 6
APC DET
VCO
AUDIO IF PRE AMP
SIF DET
4.5MHz BPF
LIMITER
SOUND DET
AUDIO OUT 10
Vcc 3
SW9V
Q710, 711, 712
EQUALIZER
TUNER VIDEO
VIDEO (MA-88)
TUNER AUDIO
AUDIO (MA-88)
SLV-315VP
CN402
8
IC801
VPS DATA DECODER
TU
CN402
8
13 CVDS
UNSW 5.8V
14 VDD
SCL 2
SDA 3
DAVN 6
IC802
VPS CONTROL
25 SCL
26 SDA
37 DAVN
21
22
X801 4.19MHz
SCLK 31
SI 29
SO 30
VPS CS 36
VPS RST 20
VDD 38
VDD 39
BACK UP 5V
CN402
5
7
6
3
4
CN402
5
7
6
3
4
CN502
18
17
16
13
12
SCLK
SI
SO
VPS CS
VPS RST
TIMER/ MODE CONTROL (MF-125)
(See Page 98)
CV-22 BOARD (VPS)

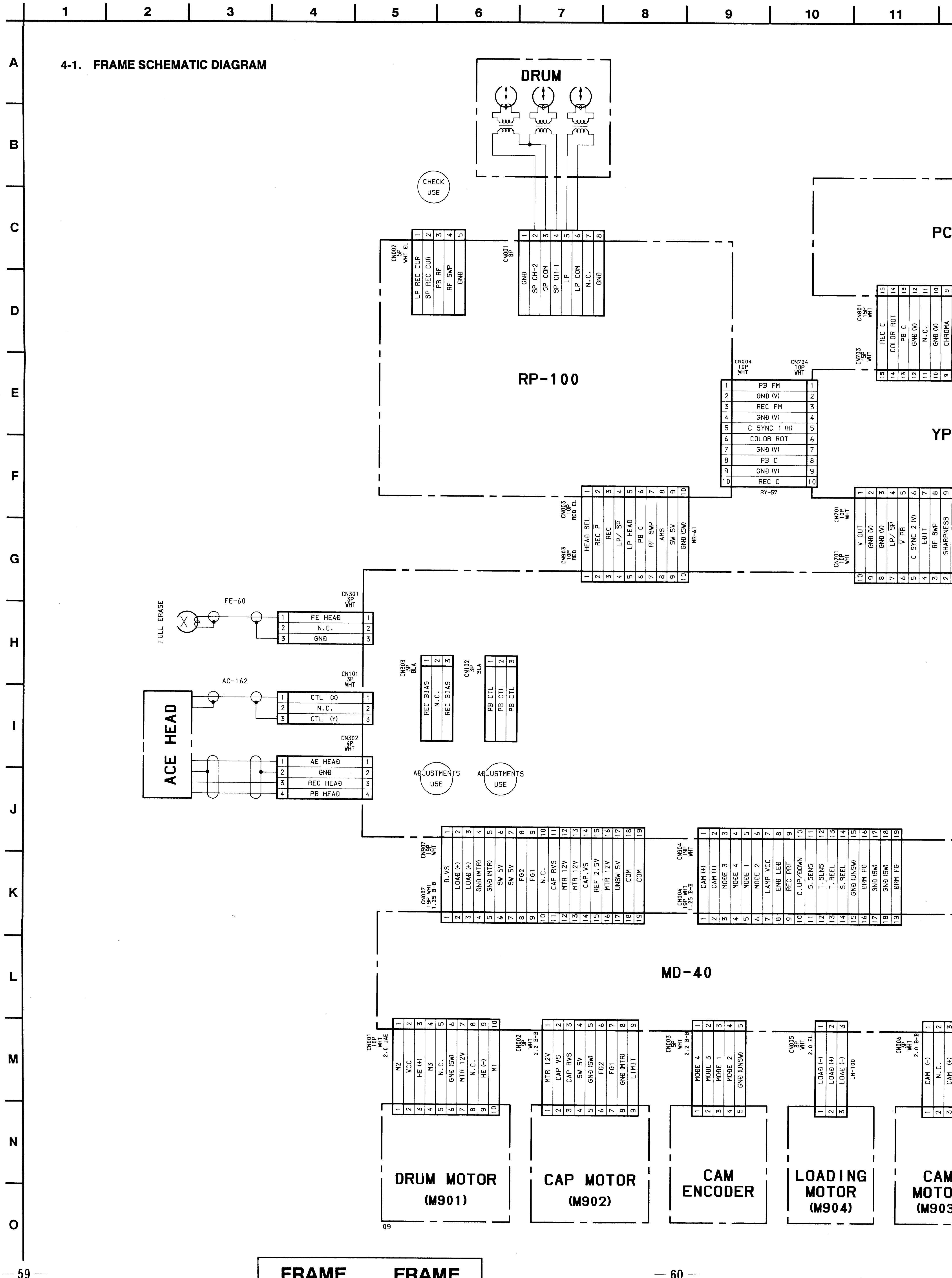
3-16. POWER BLOCK DIAGRAM


POWER SUPPLY BOARD
AC IN
F101
L101
LINE FILTER
D101
RECT
Q101
SWITCHING OSC
Q102
SWITCHING CONTROL
T101
P1
P2
B1
B2
D201
RECT
SCR201
PROTECTOR
Q204,D202
PROTECTOR DET
D205
RECT
Q201
5.8V REG
IC203
5.8V REG DRIVE
Q202
5V REG
5V REG DRIVE
IC204
IC201
9V REG
Q203,205
S3
S7
S2
S1
S4
S6
S5
D203
RECT
L201
D207
RECT
D208
RECT
R218
D204
RV201
12V
REF VOLTAGE DET
CN711
DC +35V
UNSW 5.8V
SW 5V
SW 9V
POWER CTRL
CN202
CN712
MTR 12V
UNSW 12V
F -30V
F 3.6V
F 0V
CN203
MA-88 BOARD
(See Page 84)
T1702
IC703
TUNER
RF201
RF MODULATOR
IC201
VIDEO/AUDIO INPUT SELECT
IC301
AUDIO REC/PB AMP
D201
UNSW 5V
SERVO/ SYSTEM CONTROL
IC501
BUZZER
UNSW 5V
CN603
CN102
(See Page 95)
CP-52 BOARD
IC1
VIDEO SELECT
IC20
AUDIO SELECT
SW 5V
CN501
CN001
F 0V
F 3.6V
F -30V
FL001
FLUORESCENT DISPLAY
IC001
MF-125 BOARD
(See Page 111)
TIMER/MODE CONTROL
76 V FDP
42 AD7
POWER CTRL 78
POWER FAIL 61
IC002
POWER FALL DETECT
RESET 32
D003
IC003
RESET
D001
S003
RESET
VDD 34
C007
BACK-UP
SW 5V
UN SW 5V
D002
IC004
NON VOLATAILE MEMORY
CN001
CN501
UNSW 5.8V
BACK UP 5V
SW 5V
CN402
CN402
CN401
CN401
S051
POWER
CN051
CN004
POWER ON INDICATION LED
IC051
REMOTE CONTROL RECEIVER
(See Page 114)
MF-126 BOARD


MA-88 BOARD
(See Page 84)
T1702
IC703
TUNER
RF201
RF MODULATOR
IC201
VIDEO/AUDIO INPUT SELECT
IC301
AUDIO REC/PB AMP
SERVO/SYSTEM CONTROL
IC501
BUZZER
D201
UNSW 5V
(See Page 95)
SLV-315CP
CP-52 BOARD
IC101
VIDEO SELECT
IC201
AUDIO SELECT
CN603
CN102
IC701
IC802
Y PROCESS
SYNC SEP
1H DELAY CCD
IC702
YP-11 BOARD
(See Page 71)
CN702
CN703
CN801
PC-54 BOARD
IC801
CHROMA PROCESS
(See Page 74)
SW 5V
SW 9V
CN903
CN003
IC001
RP-100 BOARD
(See Page 64)
REC/PB AMP
Q201
5.8V REG
5.8V REG DRIVE
Q202
5V REG
5V REG DRIVE
IC204
IC201
9V REG
CN711
CN202
DC +35V
UNSW 5.8V
SW 5V
SW 9V
POWER CTRL
SERVO REFERENCE VOLTAGE
IC402
DRUM ERROR/CAPSTAN ERROR INTEGRATOR
IC401
IC005
DRUM FG/PG SEPARATOR
IC004
DRUM MOTOR DRIVE
CN907
CN007
MTR 12V
SW 5V
UNSW 5V
MTR 12V
CN002
CAPSTAN MOTOR
CN001
DRUM MOTOR
VCC
IC002
WAVE SHAPER (S REEL T REEL T SENS S SENS)
TAPE END SENSOR (T SENS S SENS)
REL FG SENSOR (T REEL S REEL)
CN904
CN004
LAMP Vcc
TAPE LED
(See Page 105)
MD-40 BOARD
CN712
MTR 12V
UNSW 12V
D204
F -30V
F 3.6V
F 0V
CN203
CTL HEAD CONTROL CTL AMP
IC101
CAM/LOADING MOTOR DRIVE
IC404
MF-125 BOARD
(See Page 111)
CN501
CN001
FL001
FLUORESCENT DISPLAY
IC001
TIMER/MODE CONTROL
V FDP
AD7
POWER CTRL
POWER FAIL
RESET
VDD
IC002
POWER FAIL DETECT
IC003
RESET
D003
D001
D002
S003 RESET
C007 BACK-UP
IC004
NON VOLATAILE MEMORY
SW 5V
UN SW 5V
S051 POWER
POWER ON INDICATION LED
IC051
REMOTE CONTROL RECEIVER
CN051
CN004
(See Page 114)
MF-126 BOARD
UNSW 5.8V
BACK UP 5V
SW 5V
CN402
CN401
SLV-315VP
IC801
IC802
VPS
UNSW 5V
IC401
ON SCREEN DISPLAY
IC490
SYNC SEP
H SYNC DETECT
D407
(See Page 98)
CV-22 BOARD

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



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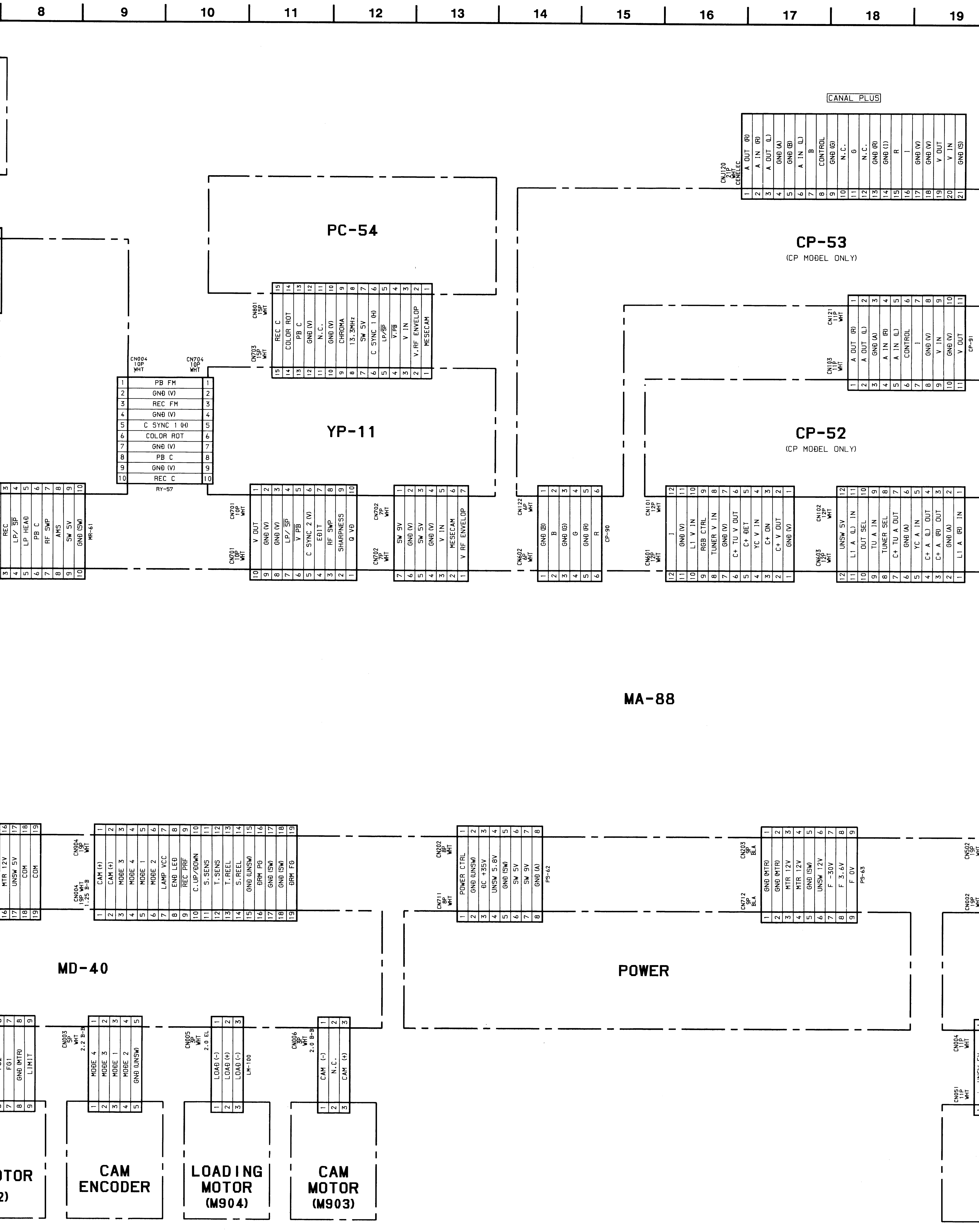
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
DRUM
CHECK USE
CN002 5P WHT EL
LP REC CUR
SP REC CUR
PB RF
RF SWP
GND
CN001 8P
GND
SP CH-2
SP COM
SP CH-1
LP
LP COM
N.C.
GND
RP-100
PC
CN801 15P WHT
CN703 15P WHT
REC C
COLOR ROT
PB C
GND (V)
N.C.
GND (V)
CHROMA
CN004 10P WHT
CN704 10P WHT
PB FM
GND (V)
REC FM
GND (V)
C SYNC 1 (H)
COLOR ROT
GND (V)
PB C
GND (V)
REC C
RY-57
YP
CN003 10P RED EL
CN903 10P RED
HEAD SEL
REC P
REC
LP/ SP
LP HEAD
PB C
RF SWP
AMS
SW 5V
GND (SW)
MR-61
CN701 10P WHT
CN701 10P WHT
V OUT
GND (V)
GND (V)
LP/ SP
V PB
C SYNC 2 (V)
EDIT
RF SWP
SHARPNESS
FULL ERASE
FE-60
CN301 3P WHT
FE HEAD
N.C.
GND
CN303 3P BLA
REC BIAS
N.C.
REC BIAS
CN102 3P BLA
PB CTL
PB CTL
PB CTL
AC-162
CN101 3P WHT
CTL (X)
N.C.
CTL (Y)
ACE HEAD
CN302 4P WHT
AE HEAD
GND
REC HEAD
PB HEAD
ADJUSTMENTS USE
ADJUSTMENTS USE
CN907 19P WHT
CN007 19P WHT 1.25 B-B
D.VS
LOAD (+)
LOAD (+)
GND (MTR)
GND (MTR)
SW 5V
SW 5V
FG2
FG1
N.C.
CAP RVS
MTR 12V
MTR 12V
CAP.VS
REF 2.5V
MTR 12V
UNSW 5V
COM
COM
CN904 19P WHT
CN004 19P WHT 1.25 B-B
CAM (+)
CAM (+)
MODE 3
MODE 4
MODE 1
MODE 2
LAMP VCC
END LED
REC PRF
C.UP/DOWN
S.SENS
T.SENS
T.REEL
S.REEL
GND (UNSW)
DRM PG
GND (SW)
GND (SW)
DRM FG
MD-40
CN001 10P WHT 2.0 JAE
M2
VCC
HE (+)
M3
N.C.
GND (SW)
MTR 12V
N.C.
HE (-)
M1
CN002 9P WHT 2.2 B-B
MTR 12V
CAP VS
CAP RVS
SW 5V
GND (SW)
FG2
FG1
GND (MTR)
LIMIT
CN003 5P WHT 2.2 B-B
MODE 4
MODE 3
MODE 1
MODE 2
GND (UNSW)
CN005 3P WHT 2.0 EL
LOAD (-)
LOAD (+)
LOAD (-)
LM-100
CN006 3P WHT 2.0 B-B
CAM (-)
N.C.
CAM (+)
DRUM MOTOR (M901)
CAP MOTOR (M902)
CAM ENCODER
LOADING MOTOR (M904)
CAM MOTO (M903
09


8
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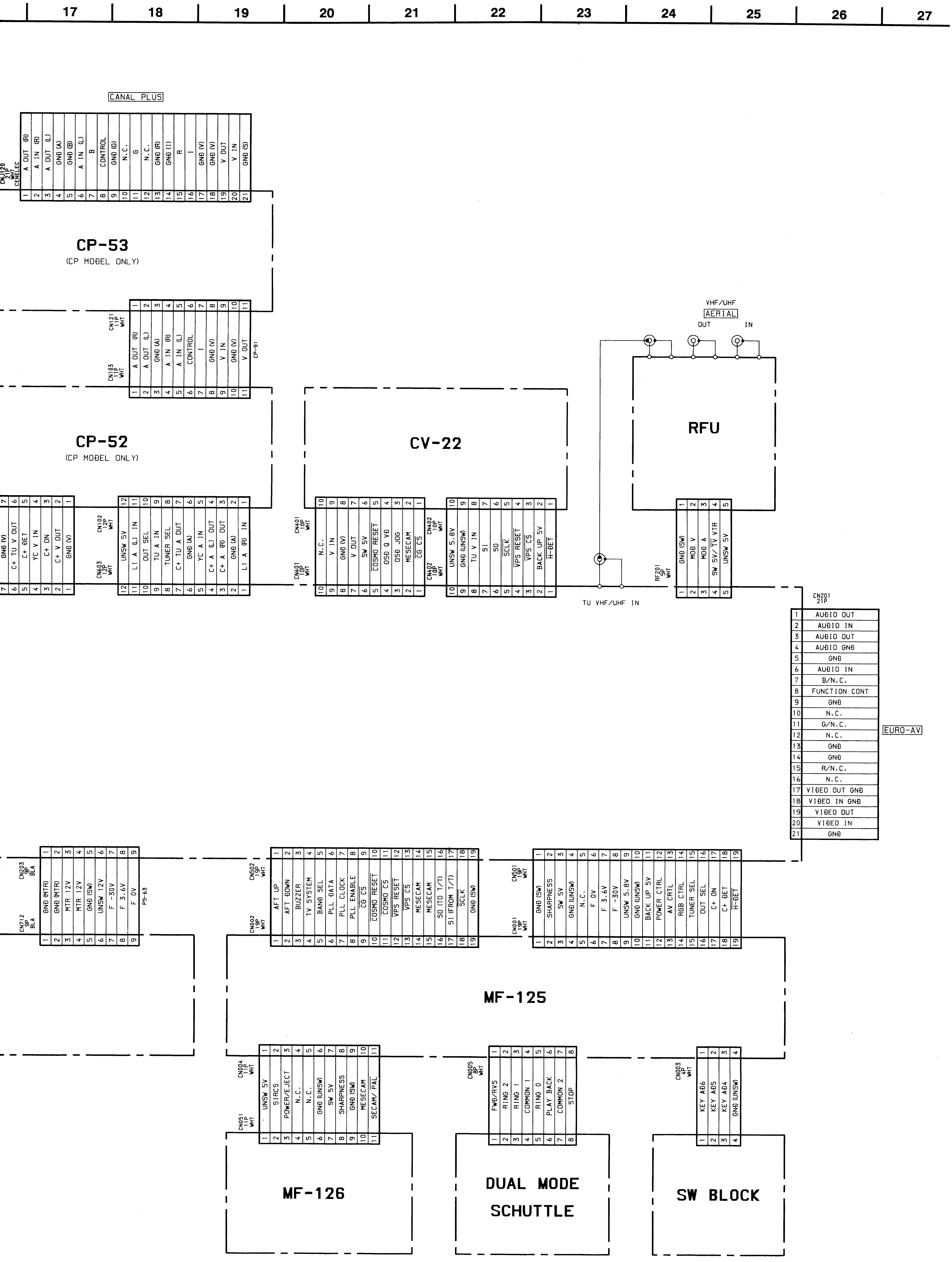
17
18
19
CANAL PLUS
CNJ120 21P WHT CENELEC
A OUT (R)
A IN (R)
A OUT (L)
GND (A)
GND (B)
A IN (L)
B
CONTROL
GND (G)
N.C.
G
N.C.
GND (R)
GND (I)
R
I
GND (V)
GND (V)
V OUT
V IN
GND (S)
PC-54
CP-53
(CP MODEL ONLY)
CN801 15P WHT
CN703 15P WHT
REC C
COLOR ROT
PB C
GND (V)
N.C.
GND (V)
CHROMA
13.3MHz
SW 5V
C SYNC 1 (H)
LP/SP
V.PB
V IN
V.RF ENVELOP
MESECAM
CN121 11P WHT
CN103 11P WHT
A OUT (R)
A OUT (L)
GND (A)
A IN (R)
A IN (L)
CONTROL
I
GND (V)
V IN
GND (V)
V OUT
CP-91
CN004 10P WHT
CN704 10P WHT
PB FM
GND (V)
REC FM
GND (V)
C SYNC 1 (H)
COLOR ROT
GND (V)
PB C
GND (V)
REC C
RY-57
YP-11
CP-52
(CP MODEL ONLY)
REC
LP/SP
LP HEAD
PB C
RF SWP
AMS
SW 5V
GND (SW)
MR-61
CN701 10P WHT
V OUT
GND (V)
GND (V)
LP/SP
V PB
C SYNC 2 (V)
EDIT
RF SWP
SHARPNESS
Q VD
CN702 7P WHT
SW 9V
GND (V)
SW 5V
GND (V)
V IN
MESECAM
V RF ENVELOP
CN122 6P WHT
CN602 6P WHT
GND (B)
B
GND (G)
G
GND (R)
R
CP-90
CN101 12P WHT
CN601 12P WHT
I
GND (V)
L1 V IN
RGB CTRL
TUNER V IN
GND (V)
C+ TU V OUT
C+ DET
YC V IN
C+ ON
C+ V OUT
GND (V)
CN102 12P WHT
CN603 12P WHT
UNSW 5V
L1 A (L) IN
OUT SEL
TU A IN
TUNER SEL
C+ TU A OUT
GND (A)
YC A IN
C+ A (L) OUT
C+ A (R) OUT
GND (A)
L1 A (R) IN
MA-88
MTR 12V
UNSW 5V
COM
COM
CN904 19P WHT
CN004 19P WHT 1.25 B-B
CAM (+)
CAM (+)
MODE 3
MODE 4
MODE 1
MODE 2
LAMP VCC
END LED
REC PRF
C.UP/DOWN
S.SENS
T.SENS
T.REEL
S.REEL
GND (UNSW)
DRM PG
GND (SW)
GND (SW)
DRM FG
CN202 8P WHT
CN711 8P WHT
POWER CTRL
GND (UNSW)
DC +35V
UNSW 5.8V
GND (SW)
SW 5V
SW 9V
GND (A)
PS-62
CN203 9P BLA
CN712 9P BLA
GND (MTR)
GND (MTR)
MTR 12V
MTR 12V
GND (SW)
UNSW 12V
F -30V
F 3.6V
F 0V
PS-63
CN502 19P WHT
CN002 19P WHT
MD-40
POWER
FG1
GND (MTR)
LIMIT
CN003 5P WHT 2.2 B-B
MODE 4
MODE 3
MODE 1
MODE 2
GND (UNSW)
CN005 3P WHT 2.0 EL
LOAD (-)
LOAD (+)
LOAD (-)
LM-100
CN006 3P WHT 2.0 B-B
CAM (-)
N.C.
CAM (+)
CN004 11P WHT
CN051 11P WHT
OTOR
2)
CAM ENCODER
LOADING MOTOR (M904)
CAM MOTOR (M903)


17
18
19
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22
23
24
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26
27
CANAL PLUS
CN1120 21P WHT CENELEC
A OUT (R)
A IN (R)
A OUT (L)
GND (A)
GND (B)
A IN (L)
B
CONTROL
GND (G)
N.C.
G
N.C.
GND (R)
GND (I)
R
I
GND (V)
GND (V)
V OUT
V IN
GND (S)
CP-53
(CP MODEL ONLY)
CN121 11P WHT
CN103 11P WHT
A OUT (R)
A OUT (L)
GND (A)
A IN (R)
A IN (L)
CONTROL
I
GND (V)
V IN
GND (V)
V OUT
CP-91
CP-52
(CP MODEL ONLY)
GND (V)
C+ TU V OUT
C+ DET
YC V IN
C+ ON
C+ V OUT
GND (V)
CN102 12P WHT
CN603 12P WHT
UNSW 5V
L1 A (L) IN
OUT SEL
TU A IN
TUNER SEL
C+ TU A OUT
GND (A)
YC A IN
C+ A (L) OUT
C+ A (R) OUT
GND (A)
L1 A (R) IN
CV-22
CN401 10P WHT
N.C.
V IN
GND (V)
V OUT
SW 5V
COSMO RESET
OSD Q VD
OSD JOG
MESECAM
CG CS
CN402 10P WHT
UNSW 5.8V
GND (UNSW)
TU V IN
SI
SO
SCLK
VPS RESET
VPS CS
BACK UP 5V
H-DET
VHF/UHF
AERIAL
OUT
IN
RFU
TU VHF/UHF IN
RF201 5P WHT
GND (SW)
MOD V
MOD A
SW 5V/TV VTR
UNSW 5V
CN201 21P
1 AUDIO OUT
2 AUDIO IN
3 AUDIO OUT
4 AUDIO GND
5 GND
6 AUDIO IN
7 B/N.C.
8 FUNCTION CONT
9 GND
10 N.C.
11 G/N.C.
12 N.C.
13 GND
14 GND
15 R/N.C.
16 N.C.
17 VIDEO OUT GND
18 VIDEO IN GND
19 VIDEO OUT
20 VIDEO IN
21 GND
EURO-AV
CN203 9P BLA
CN712 9P BLA
GND (MTR)
GND (MTR)
MTR 12V
MTR 12V
GND (SW)
UNSW 12V
F -30V
F 3.6V
F 0V
PS-63
CN502 19P WHT
CN002 19P WHT
AFT UP
AFT DOWN
BUZZER
TV SYSTEM
BAND SEL
PLL DATA
PLL CLOCK
PLL ENABLE
CG CS
COSMO RESET
COSMO CS
VPS RESET
VPS CS
MESECAM
MESECAM
SO (TO T/T)
SI (FROM T/T)
SCLK
GND (SW)
CN501 19P WHT
CN001 19P WHT
GND (SW)
SHARPNESS
SW 5V
GND (UNSW)
N.C.
F 0V
F 3.6V
F -30V
UNSW 5.8V
GND (UNSW)
BACK UP 5V
POWER CTRL
AV CTRL
RGB CTRL
TUNER SEL
OUT SEL
C+ ON
C+ DET
H-DET
MF-125
CN004 11P WHT
CN051 11P WHT
UNSW 5V
SIRCS
POWER/EJECT
N.C.
N.C.
GND (UNSW)
SW 5V
SHARPNESS
GND (SW)
MESECAM
SECAM/ PAL
CN005 8P WHT
FWD/RVS
RING 2
RING 1
COMMON 1
RING 0
PLAY BACK
COMMON 2
STOP
CN003 4P WHT
KEY AD6
KEY AD5
KEY AD4
GND (UNSW)
MF-126
DUAL MODE
SCHUTTLE
SW BLOCK

FRAME FRAME

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this , the necessary note is printed in each block.)

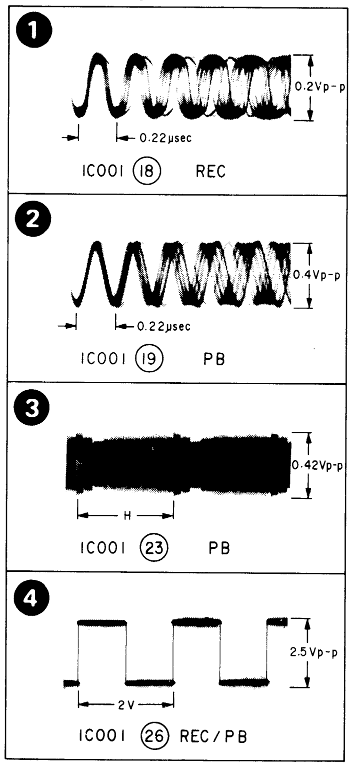
- **For printed wiring boards.**
- ○— : indicated a lead wire mounted on the component side.
- —— : indicated a lead wire mounted on the conductor side.
- ● : Through hole.
- ■ : Parts mounted on the conductor side.
- ▨ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.
- Circled numbers refer to waveforms.

- **For schematic diagrams.**
- All resistors are in ohms, 1/4W unless otherwise noted.
  kΩ : 1000Ω , MΩ : 1000kΩ .
- All capacitors are in μF unless otherwise noted. pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- [W] : nonflammable resistor.
- ~ : fusible resistor.
- ▭ : panel designation.
- ▭ : adjustment for repeair.
- —— : B+ Line.
- - - - : B– Line.
- ⇨ : IN/OUT direction of (+, –) B LINE.
- Circled numbers refer to waveforms.
- Voltages are dc between ground and measurement points.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safty.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

RP-100 BOARD

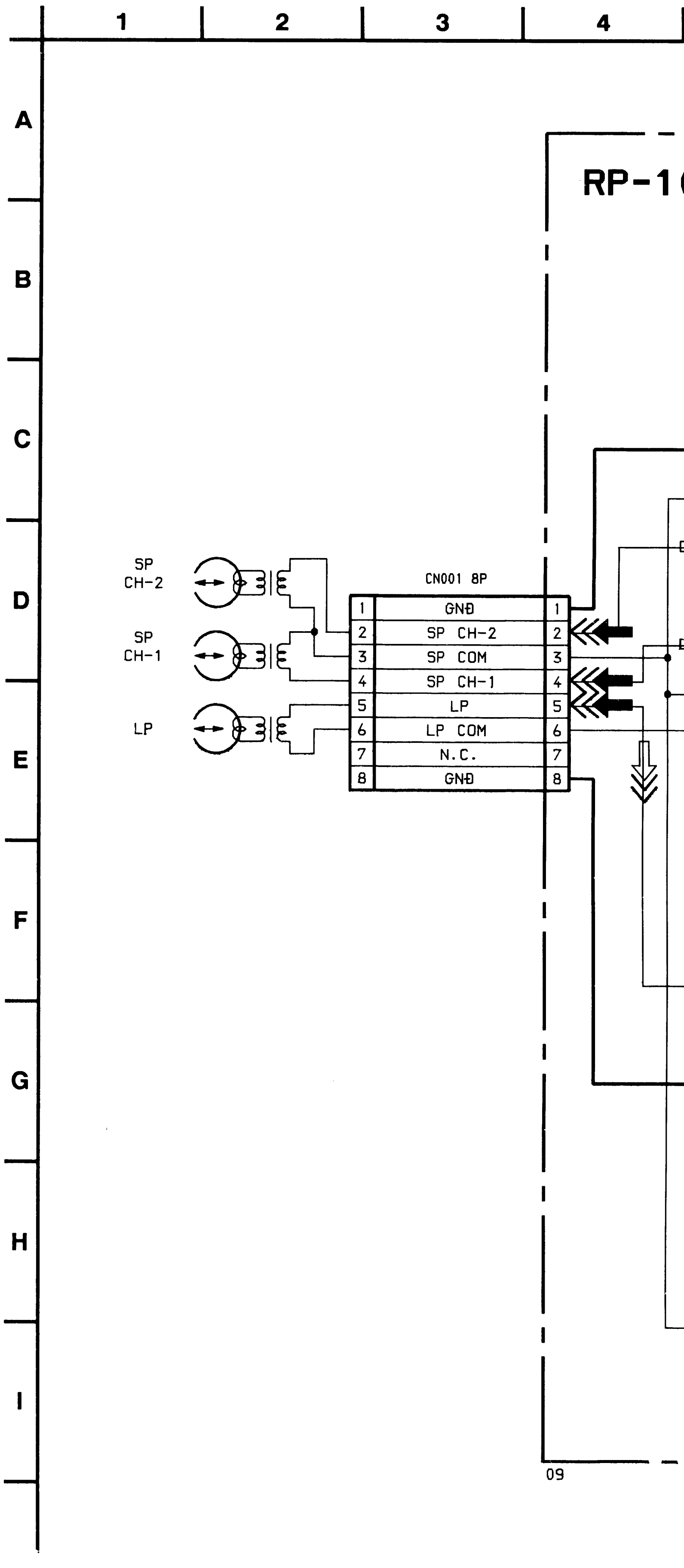


- **SIGNAL PATH (ANALOG)**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡➡	➡➡➡	
PB	⇨	⇨⇨	⇨⇨⇨	

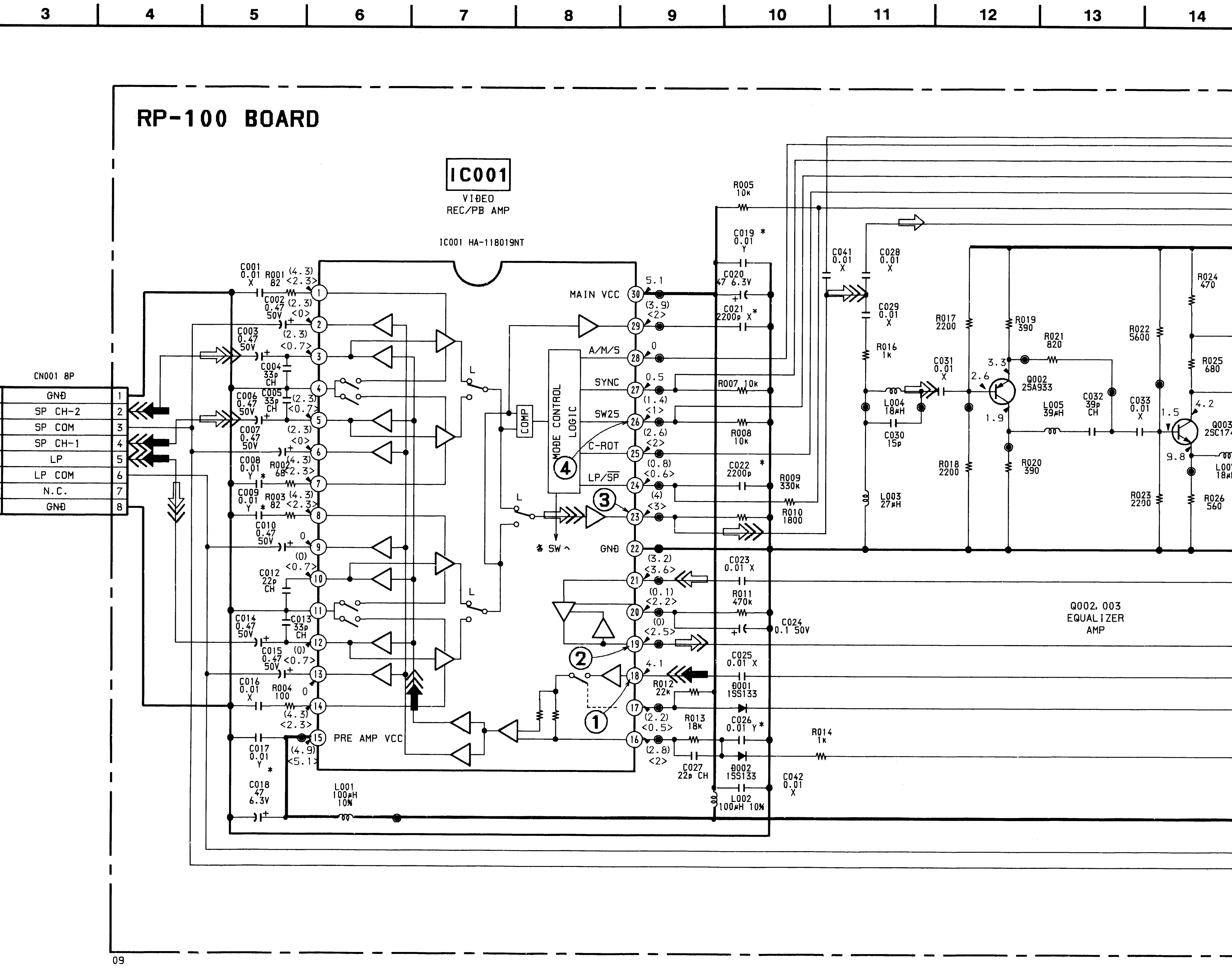
RP-100 (REC/PB AMP) SCHEMATIC DIAGRAM

— Ref. No. RP-100 BOARD: 1000 series —



SCHEMATIC DIAGRAM

00 series —



3
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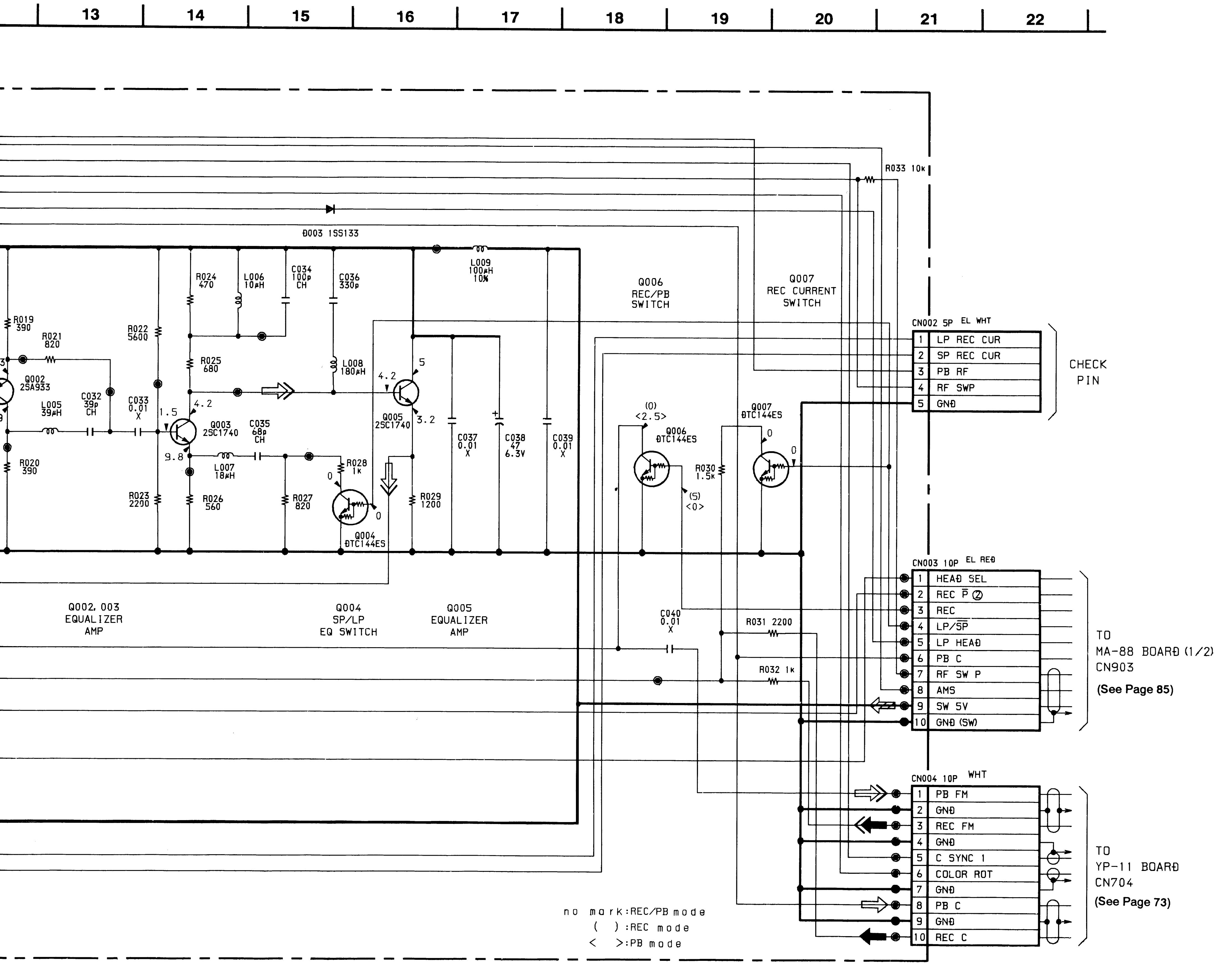
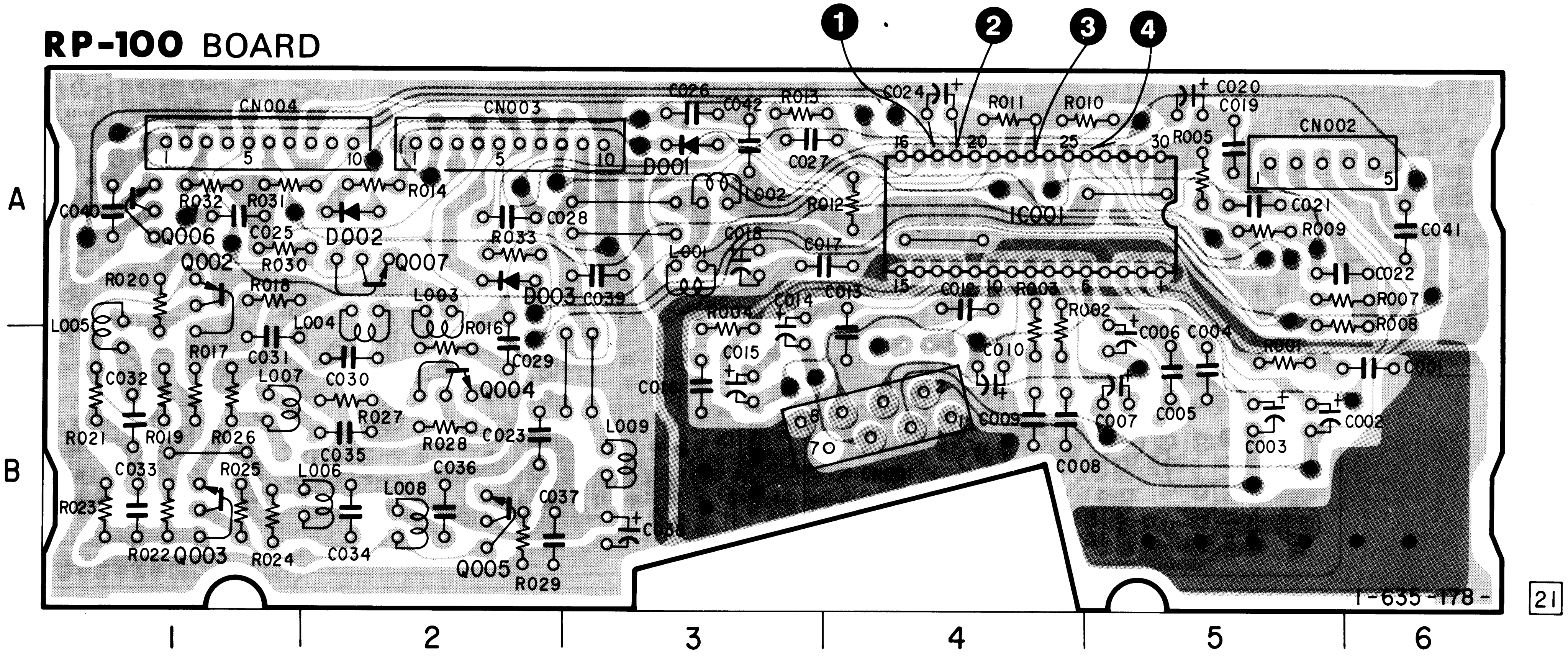
11
12
13
14
RP-100 BOARD
IC001
VIDEO
REC/PB AMP
IC001 HA-118019NT
CN001 8P
1 GND
2 SP CH-2
3 SP COM
4 SP CH-1
5 LP
6 LP COM
7 N.C.
8 GND
MAIN VCC
A/M/S
SYNC
SW25
C-ROT
LP/SP
GND
PRE AMP VCC
MODE CONTROL LOGIC
COMP
SW
L
① ② ③ ④
C001 0.01 X
R001 82
C002 0.47 50V
C003 0.47 50V
C004 33p CH
C005 33p CH
C006 0.47 50V
C007 0.47 50V
C008 0.01 Y
R002 68
C009 0.01 Y
R003 82
C010 0.47 50V
C012 22p CH
C013 33p CH
C014 0.47 50V
C015 0.47 50V
C016 0.01 X
R004 100
C017 0.01 Y
C018 47 6.3V
L001 100μH 10%
R005 10k
C019 0.01 Y
C020 47 6.3V
C021 2200p X
R007 10k
R008 10k
C022 2200p
R009 330k
R010 1800
C023 0.01 X
R011 470k
C024 0.1 50V
C025 0.01 X
R012 22k
D001 1SS133
R013 18k
C026 0.01 Y
C027 22p CH
D002 1SS133
L002 100μH 10%
C042 0.01 X
R014 1k
C041 0.01 X
C028 0.01 X
C029 0.01 X
R016 1k
L004 18μH
C030 15p
L003 27μH
C031 0.01 X
R017 2200
R018 2200
R019 390
R020 390
R021 820
Q002 2SA933
L005 39μH
C032 39p CH
C033 0.01 X
R022 5600
R023 2200
R024 470
R025 680
R026 560
Q003 2SC174
Q002, 003 EQUALIZER AMP
09


13
14
15
16
17
18
19
20
21
22
R019 390
R020 390
R021 820
Q002 2SA933
L005 39μH
C032 39p CH
C033 0.01 X
R022 5600
R023 2200
R024 470
L006 10μH
C034 100p CH
C036 330p
R025 680
L008 180μH
Q003 2SC1740
C035 68p CH
L007 18μH
R026 560
R027 820
R028 1k
Q004 DTC144ES
Q005 2SC1740
R029 1200
C037 0.01 X
C038 47 6.3V
C039 0.01 X
L009 100μH 10%
D003 1SS133
1.5
4.2
9.8
4.2
5
3.2
0
0
Q006 REC/PB SWITCH
(0)
<2.5>
Q006 DTC144ES
(5)
<0>
R030 1.5k
Q007 REC CURRENT SWITCH
Q007 DTC144ES
0
0
R033 10k
Q002, 003 EQUALIZER AMP
Q004 SP/LP EQ SWITCH
Q005 EQUALIZER AMP
C040 0.01 X
R031 2200
R032 1k
CN002 5P EL WHT
1 LP REC CUR
2 SP REC CUR
3 PB RF
4 RF SWP
5 GND
CHECK PIN
CN003 10P EL RED
1 HEAD SEL
2 REC P̄ ②
3 REC
4 LP/S̄P̄
5 LP HEAD
6 PB C
7 RF SW P
8 AMS
9 SW 5V
10 GND (SW)
TO MA-88 BOARD (1/2) CN903
(See Page 85)
CN004 10P WHT
1 PB FM
2 GND
3 REC FM
4 GND
5 C SYNC 1
6 COLOR ROT
7 GND
8 PB C
9 GND
10 REC C
TO YP-11 BOARD CN704
(See Page 73)
no mark:REC/PB mode
( ) :REC mode
< >:PB mode

RP-100 (REC/PB AMP) PRINTED WIRING BOARD

— Ref. No. RP-100 BOARD: 1000 series —

RP-100 BOARD	
D001	A-3
D002	A-2
D003	A-2
IC001	A-4
Q002	A-1
Q003	B-1
Q004	B-2
Q005	B-2
Q006	A-1
Q007	A-2


RP-100 BOARD
❶
❷
❸
❹
CN004
CN003
CN002
IC001
D001
D002
D003
Q002
Q003
Q004
Q005
Q006
Q007
L001
L002
L003
L004
L005
L006
L007
L008
L009
R001
R002
R003
R004
R005
R007
R008
R009
R010
R011
R012
R013
R014
R016
R017
R018
R019
R020
R021
R022
R023
R024
R025
R026
R027
R028
R029
R030
R031
R032
R033
C001
C002
C003
C004
C005
C006
C007
C008
C009
C010
C012
C013
C014
C015
C016
C017
C018
C019
C020
C021
C022
C023
C024
C025
C026
C027
C028
C029
C030
C031
C032
C033
C034
C035
C036
C037
C039
C040
C041
C042
1
5
10
15
16
20
25
30
A
B
1
2
3
4
5
6
1-635-178-
21

RP-100 BOARD, COMPLETE
****

< DIODE >

D001	8-719-911-19	DIODE 1SS119
D002	8-719-911-19	DIODE 1SS119
D003	8-719-911-19	DIODE 1SS119

< IC >

IC001	8-759-320-52	IC HA118019NT

< TRANSISTOR >

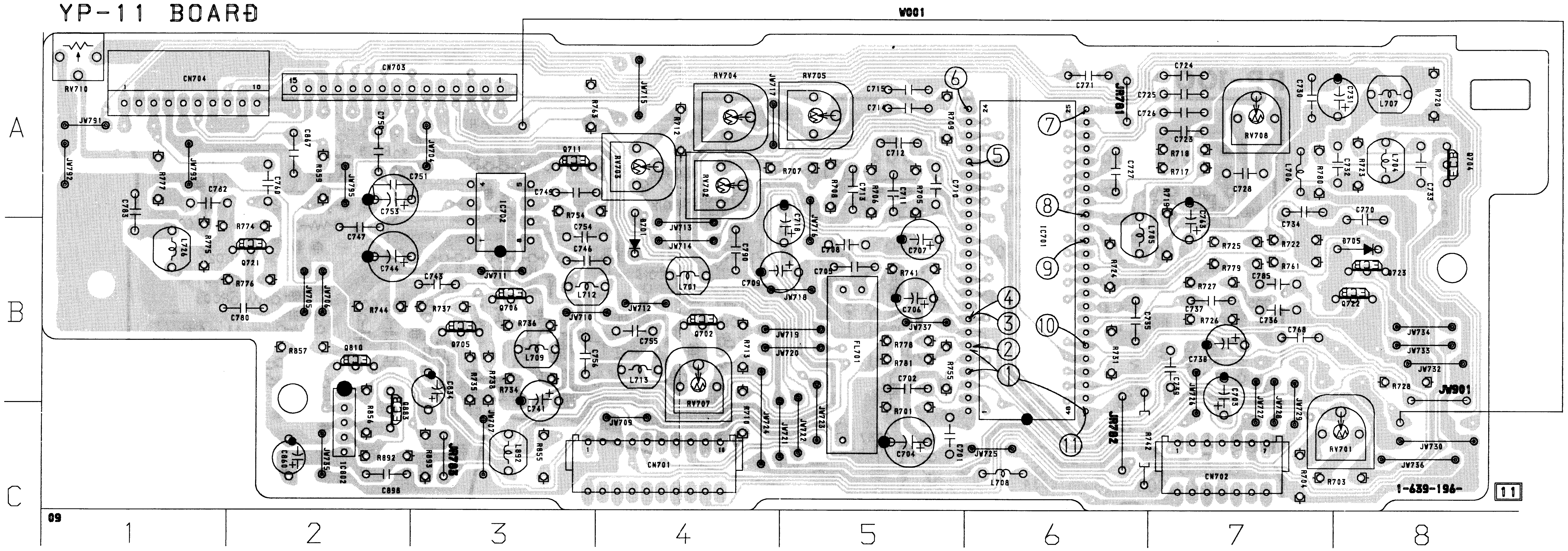
Q002	8-729-920-68	TRANSISTOR 2SA933S-QRT
Q003	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q004	8-729-900-89	TRANSISTOR DTC144ES
Q005	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q006	8-729-900-89	TRANSISTOR DTC144ES
Q007	8-729-900-89	TRANSISTOR DTC144ES

YP-11 (Y PROCESS) PRINTED WIRING BOARDS

— Ref. No. YP-11 BOARD: 2000 series —

YP-11 BOARD

D701	B-4
D705	B-8
IC701	B-6
IC702	A-3
IC802	C-2
Q702	B-4
Q704	A-8
Q705	B-3
Q706	B-3
Q711	A-3
Q721	B-2
Q722	B-8
Q723	B-8
Q810	B-2
Q883	C-2


YP-11 BOARD
V001
RV710
CN704
CN703
IC702
IC701
IC802
RV704
RV705
RV703
RV702
RV706
RV707
RV701
CN701
CN702
FL701
L701
L704
L705
L706
L707
L708
L709
L712
L713
L726
L892
D701
D705
Q702
Q704
Q705
Q706
Q711
Q721
Q722
Q723
Q810
Q883
JW901
1-639-196-
11
09
A
B
C
1
2
3
4
5
6
7
8

YP-11 BOARD. COMPLETE
****

< DIODE >

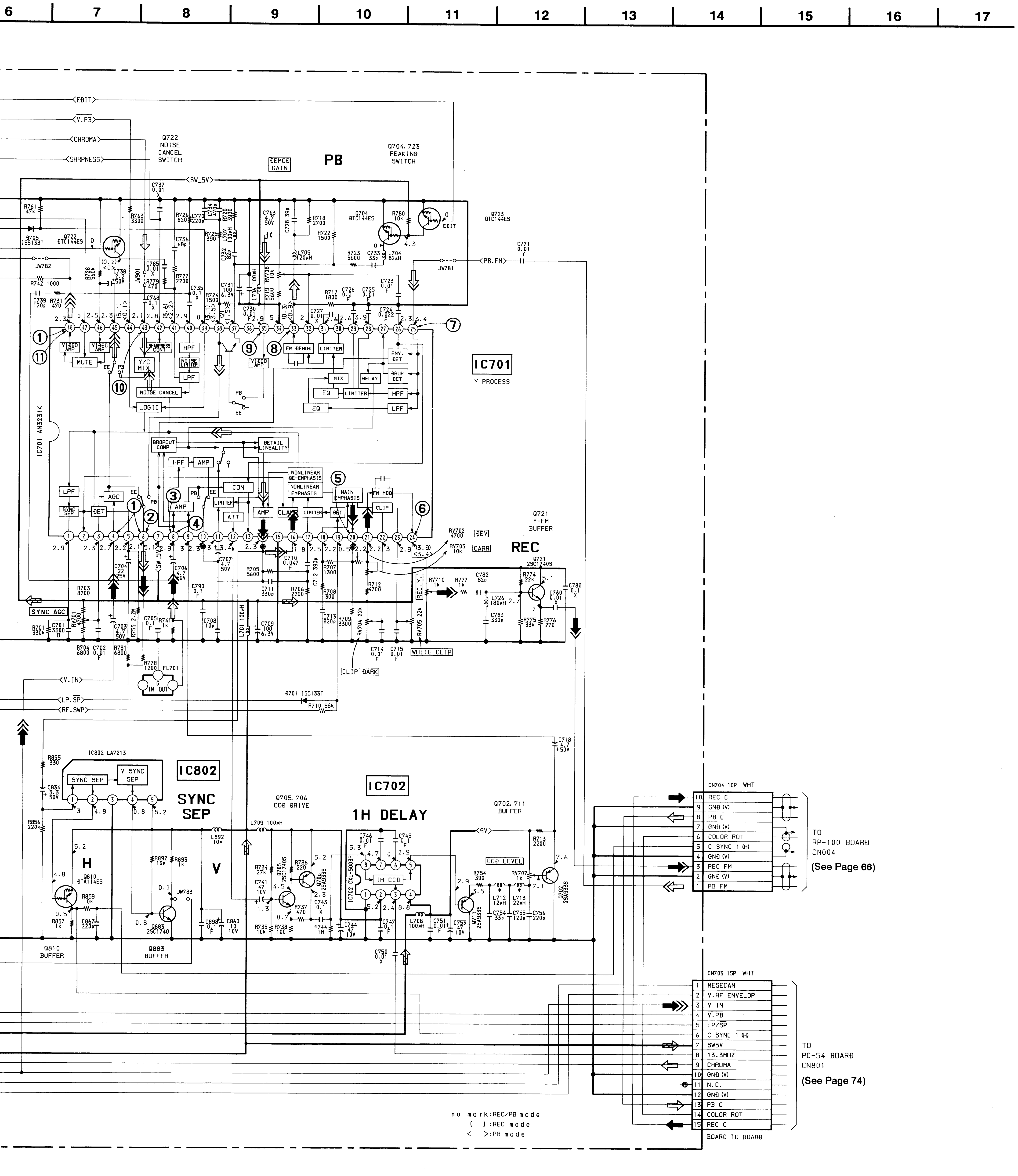
D701	8-719-911-19	DIODE 1SS119
D705	8-719-911-19	DIODE 1SS119

< IC >

IC701	8-759-420-07	IC AN3231K
IC702	8-752-321-89	IC CXL5003P
IC802	8-759-822-05	IC LA7213

< TRANSISTOR >

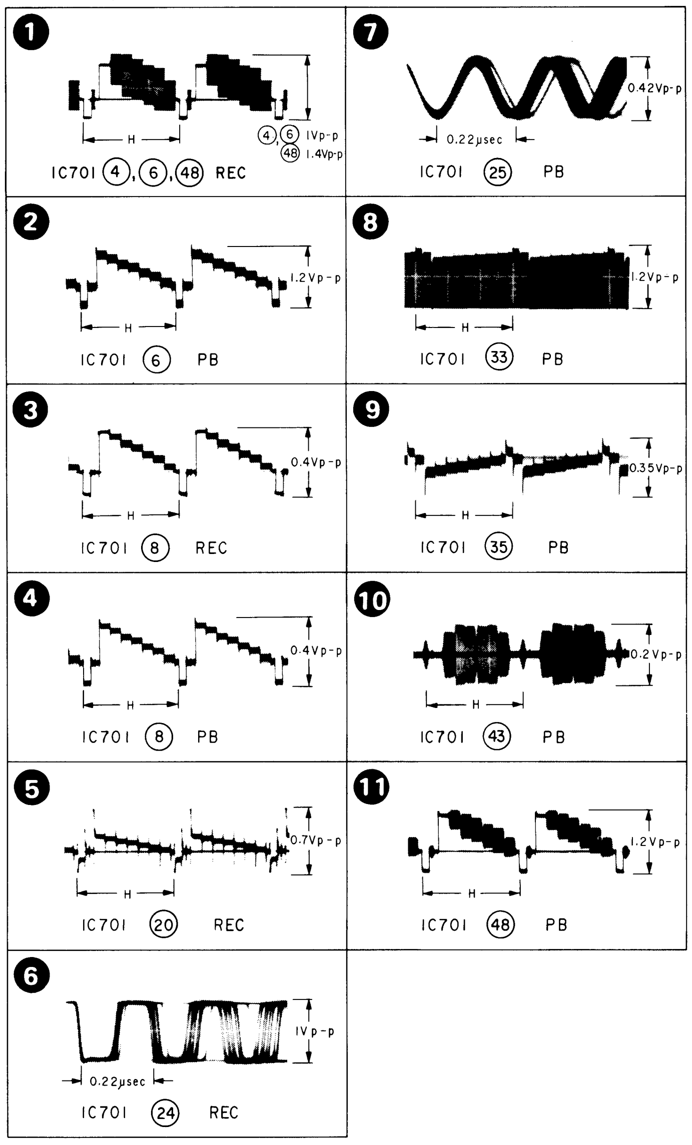
Q702	8-729-920-68	TRANSISTOR	2SA933S-QRT
Q704	8-729-900-89	TRANSISTOR	DTC144ES
Q705	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q706	8-729-920-68	TRANSISTOR	2SA933S-QRT
Q711	8-729-920-68	TRANSISTOR	2SA933S-QRT
Q721	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q722	8-729-900-89	TRANSISTOR	DTC144ES
Q723	8-729-900-89	TRANSISTOR	DTC144ES
Q810	8-729-900-65	TRANSISTOR	DTA144ES
Q883	8-729-119-78	TRANSISTOR	2SC2785-HFE

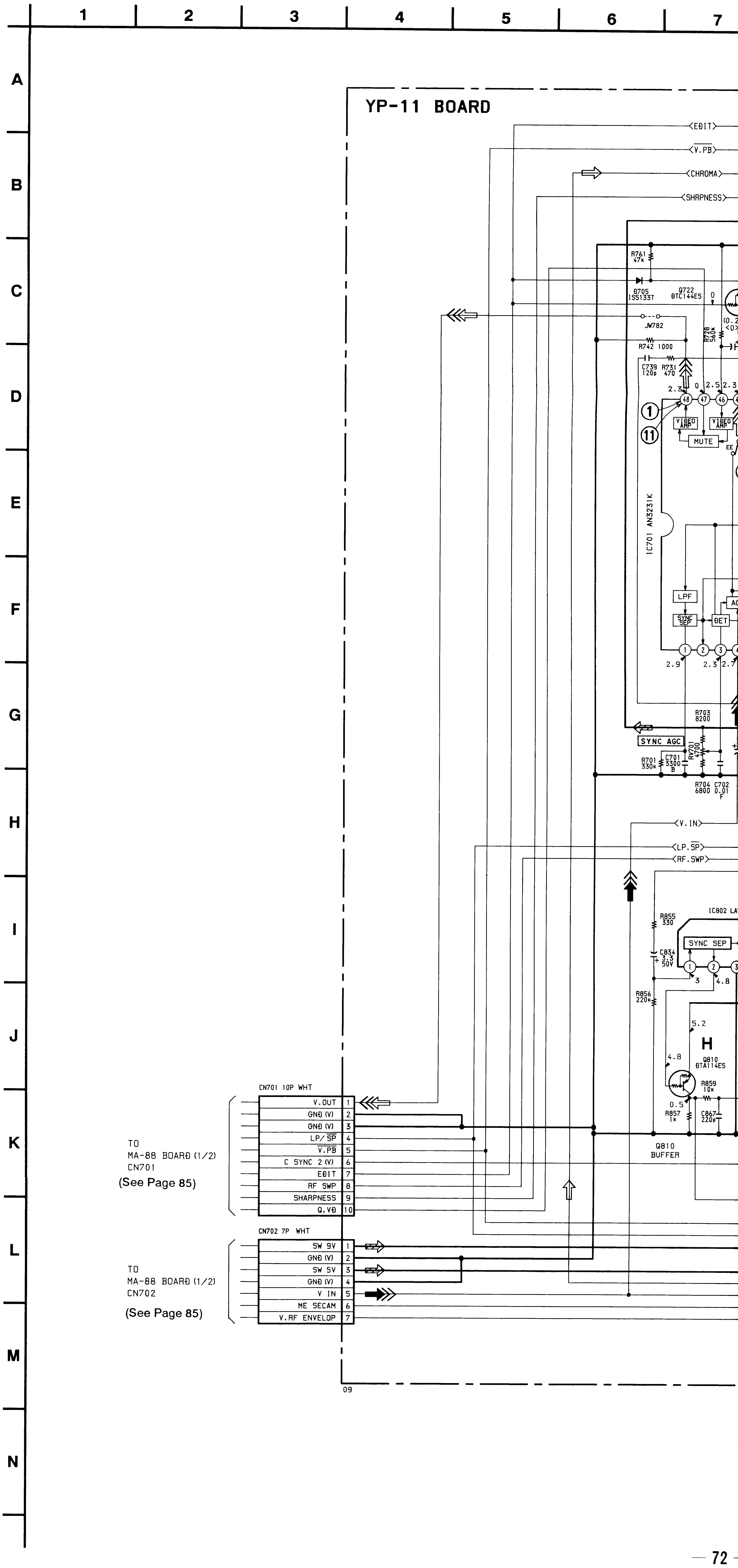

6
7
8
9
10
11
12
13
14
15
16
17
PB
REC
IC701
Y PROCESS
IC701 AN3231K
DEMOD GAIN
Q722 NOISE CANCEL SWITCH
Q704, 723 PEAKING SWITCH
Q721 Y-FM BUFFER
VIDEO AMP
MUTE
Y/C MIX
SHARPNESS CONT
HPF
NOISE LIMITER
LPF
NOISE CANCEL
LOGIC
FM DEMOD
LIMITER
ENV. DET
DROP DET
MIX
DELAY
EQ
DROPOUT COMP
DETAIL LINEALITY
AMP
AGC
SYNC SEP
DET
CON
ATT
NONLINEAR DE-EMPHASIS
NONLINEAR EMPHASIS
MAIN EMPHASIS
CLAMP
FM MOD
CLIP
SYNC AGC
DEV
CARR
WHITE CLIP
CLIP DARK
REC.Y
FL701
IC802
SYNC SEP
IC802 LA7213
V SYNC SEP
H
V
Q810 BUFFER
Q883 BUFFER
IC702
1H DELAY
Q705, 706 CCD DRIVE
Q702, 711 BUFFER
CCD LEVEL
1H CCD
IC702 CXL-5003P
<EBIT>
<V.PB>
<CHROMA>
<SHRPNESS>
<SW_5V>
<PB.FM>
<V.IN>
<LP.SP>
<RF.SWP>
<9V>
CN704 10P WHT
10 REC C
9 GND (V)
8 PB C
7 GND (V)
6 COLOR ROT
5 C SYNC 1 (H)
4 GND (V)
3 REC FM
2 GND (V)
1 PB FM
TO RP-100 BOARD CN004
(See Page 66)
CN703 15P WHT
1 MESECAM
2 V.RF ENVELOP
3 V IN
4 V.PB
5 LP/SP
6 C SYNC 1 (H)
7 SW5V
8 13.3MHZ
9 CHROMA
10 GND (V)
11 N.C.
12 GND (V)
13 PB C
14 COLOR ROT
15 REC C
BOARD TO BOARD
TO PC-54 BOARD CN801
(See Page 74)
no mark:REC/PB mode
( ):REC mode
< >:PB mode

YP-11 (Y PROCESS) SCHEMATIC DIAGRAMS

— Ref. No. YP-11 BOARD: 2000 series —

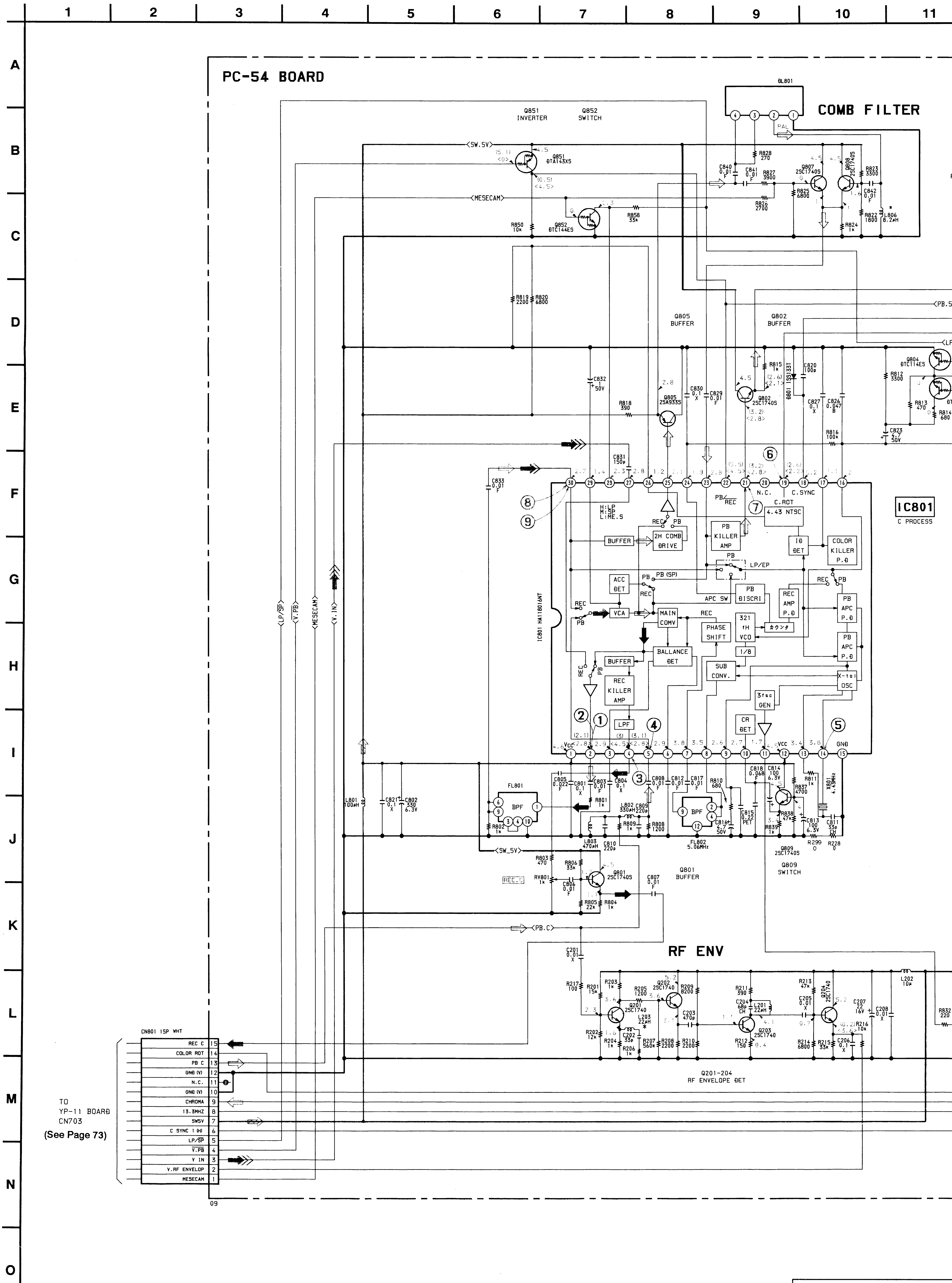
YP-11 BOARD



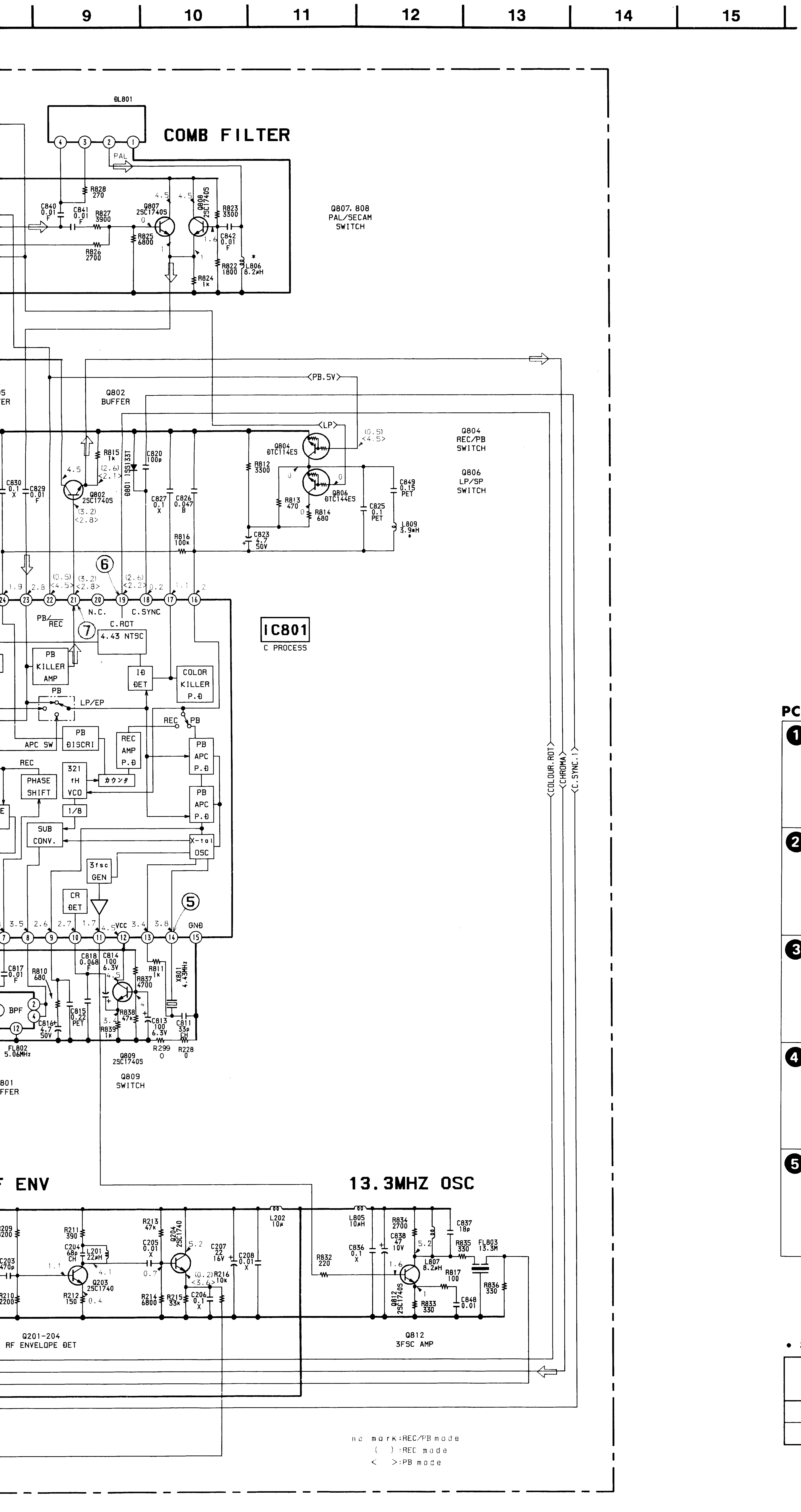

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
K
L
M
N
YP-11 BOARD
EDIT
V.PB
CHROMA
SHRPNESS
R761 47k
D705 1SS133T
Q722 DTC144ES
JW782
R742 1000
C739 120p
R731 470
R738 560k
IC701 AN3231K
VIDEO AMP
MUTE
LPF
SYNC SEP
DET
SYNC AGC
R703 8200
R701 330k
C701 3300
RV701 4700
R704 6800
C702 0.01
V.IN
LP.SP
RF.SWP
IC802
R855 330
SYNC SEP
C834 3.3 50V
R856 220k
Q810 DTA114ES
R859 10k
R857 1k
C867 220p
Q810 BUFFER
CN701 10P WHT
V.OUT
GND (V)
GND (V)
LP/SP
V.PB
C SYNC 2 (V)
EDIT
RF SWP
SHARPNESS
Q.VD
TO
MA-88 BOARD (1/2)
CN701
(See Page 85)
CN702 7P WHT
SW 9V
GND (V)
SW 5V
GND (V)
V IN
ME SECAM
V.RF ENVELOP
TO
MA-88 BOARD (1/2)
CN702
(See Page 85)
09

- **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡≫	➡⋙	
PB	⇨	⇨≫	⇨⋙	

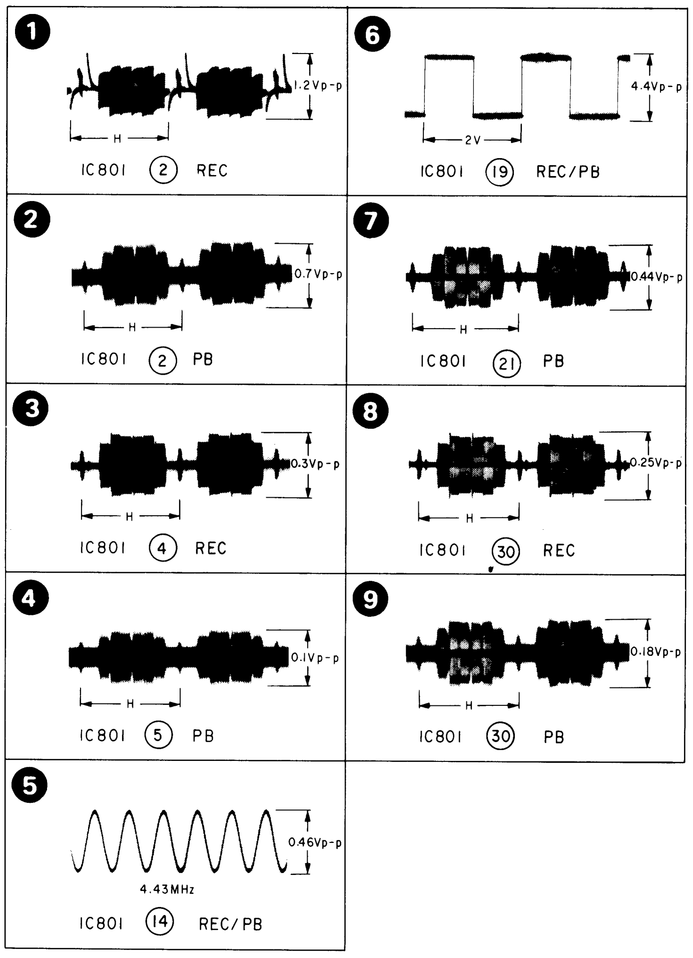

PC-54 BOARD
COMB FILTER
ƟL801
PAL
Q851 INVERTER
Q852 SWITCH
Q851 ƟTA143XS
Q852 ƟTC144ES
<SW.5V>
<MESECAM>
Q807 2SC1740S
Q806 2SC1740S
Q805 BUFFER
Q805 2SA933S
Q802 BUFFER
Q802 2SC1740S
Q804 ƟTC114ES
<PB.5
IC801
C PROCESS
IC801 HA11801GANT
H:LP
M:SP
L:ME.S
2H COMB ƟRIVE
BUFFER
PB KILLER AMP
4.43 NTSC
C.ROT
C.SYNC
N.C.
Iθ ƟET
COLOR KILLER P.Ɵ
LP/EP
ACC ƟET
VCA
MAIN COMV
PB ƟISCRI
APC SW
REC AMP P.Ɵ
PB APC P.Ɵ
PHASE SHIFT
321 fH VCO
カウンタ
BALLANCE ƟET
1/8
SUB CONV.
X-tal OSC
REC KILLER AMP
3fsc GEN
CR ƟET
LPF
GNƟ
FL801 BPF
FL802 5.06MHz
X801 4.43MHz
Q801 2SC1740S
Q801 BUFFER
Q809 2SC1740S
Q809 SWITCH
<SW_5V>
<PB.C>
REC.C
RF ENV
Q201 2SC1740
Q202 2SC1740
Q203 2SC1740
Q204 2SC1740
Q201-204 RF ENVELOPE ƟET
<LP/SP>
<V.PB>
<MESECAM>
<V.IN>
CN801 15P WHT
REC C 15
COLOR ROT 14
PB C 13
GNƟ (V) 12
N.C. 11
GNƟ (V) 10
CHROMA 9
13.3MHZ 8
SWSV 7
C SYNC 1 ƟƟ 6
LP/SP 5
V.PB 4
V IN 3
V.RF ENVELOP 2
MESECAM 1
TO YP-11 BOARƟ CN703
(See Page 73)
09

CHROMA PRO


9
10
11
12
13
14
15
COMB FILTER
ØL801
PAL
Q807, 808
PAL/SECAM
SWITCH
R828 270
C840 0.01 F
C841 0.01 F
R827 3900
R826 2700
R825 6800
Q807 2SC1740S
Q808 2SC1740S
R823 3300
C842 0.01 F
R822 1800
L806 8.2μH
R824 1k
<PB.5V>
Q802
BUFFER
<LP>
Q804
REC/PB
SWITCH
Q806
LP/SP
SWITCH
Q804 ØTC114ES
Q806 ØTC114ES
R812 3300
R813 470
R814 680
C849 0.15 PET
C825 0.1 PET
L809 3.9μH
C823 4.7 50V
R815 1k
C820 100p
D801 1SS133T
C830 0.1 X
C829 0.01 F
Q802 2SC1740S
C827 0.1 X
C826 0.047 B
R816 100k
IC801
C PROCESS
PB/REC
N.C.
C.ROT
C.SYNC
4.43 NTSC
PB KILLER AMP
IØ DET
COLOR KILLER P.Ø
LP/EP
PB DISCRI
REC AMP P.Ø
APC SW
REC
PHASE SHIFT
321 fH VCO
カウンタ
PB APC P.Ø
1/8
SUB CONV.
X-tal OSC
3fsc GEN
CR DET
VCC
GND
<COLOUR.ROT>
<CHROMA>
<C.SYNC.1>
C817 0.01 F
R810 680
C818 0.068 F
C814 100 6.3V
R811 1k
R837 4700
X801 4.43MHz
BPF
C816 4.7 50V
C815 0.22 PET
R838 47k
R839 1k
C813 100 6.3V
C811 33p CH
FL802 5.06MHz
R299 0
R228 0
Q809 2SC1740S
Q809
SWITCH
F ENV
13.3MHZ OSC
R209 2200
R211 390
R213 47k
Q204 2SC1740
C205 0.01 X
C204 68p CH
L201 22μH
C207 22 16V
C208 0.01 X
L202 10μ
C203 470p
Q203 2SC1740
R212 150
R214 6800
R215 33k
C206 0.1 X
R216 10k
R210 2200
Q201-204
RF ENVELOPE DET
L805 10μH
R834 2700
C836 0.1 X
C838 47 10V
C837 18p
R835 330
FL803 13.3M
R832 220
L807 8.2μH
R817 100
Q812 2SC1740S
R836 330
R833 330
C848 0.01
Q812
3FSC AMP

no mark:REC/PB mode
( ):REC mode
< >:PB mode

PC-54 BOARD



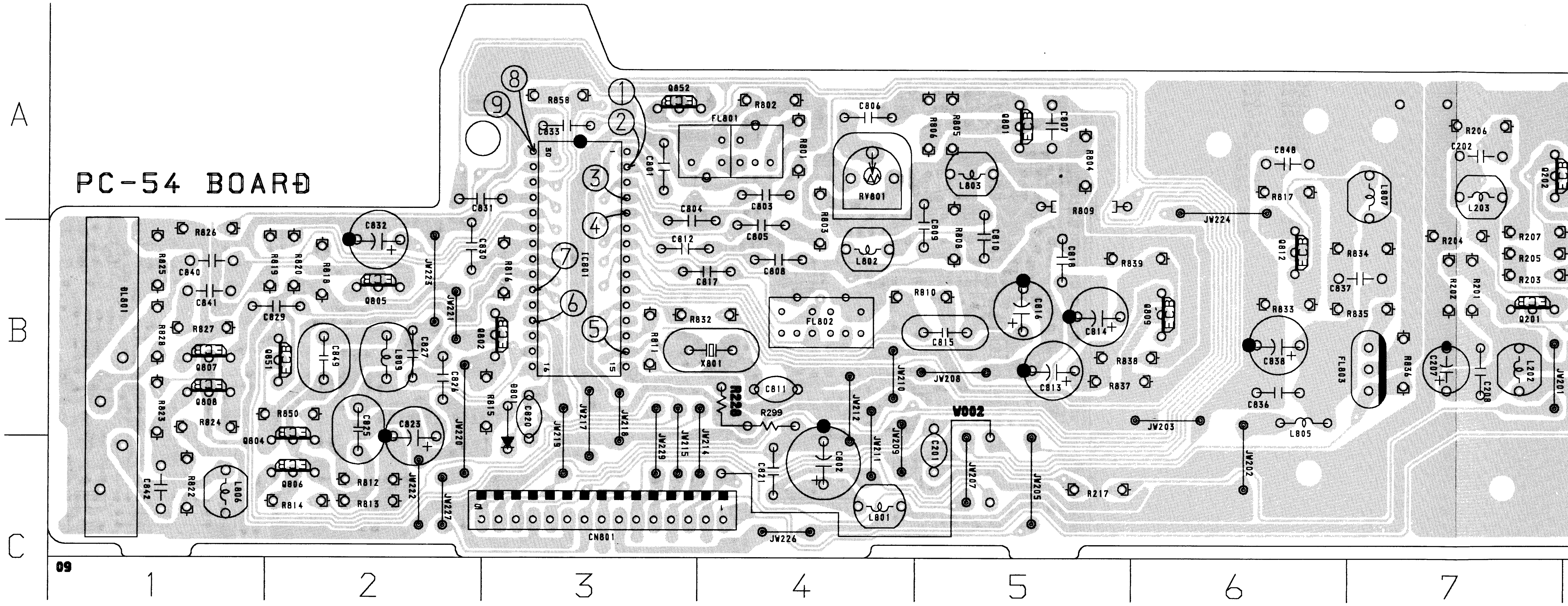
- **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡›	➡»	
PB	⇨			

PC-54 (CHROMA PROCESS) PRINTED WIRING BOARDS

— Ref. No. PC-54 BOARD: 3000 series —

PC-54	BOARD
D801	B-3
IC801	B-3
Q201	B-7
Q202	A-7
Q203	B-8
Q204	B-8
Q801	A-5
Q802	B-3
Q804	C-2
Q805	B-2
Q806	C-2
Q807	B-1
Q808	B-1
Q809	B-6
Q812	B-6
Q851	B-2
Q852	A-3


PC-54 BOARD
A
B
C
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09
①
②
③
④
⑤
⑥
⑦
⑧
⑨
IC801
CN801
FL801
FL802
FL803
RV801
X801
VO02
DL801
D801
L801
L802
L803
L805
L806
L807
L809
L202
L203
Q201
Q202
Q801
Q802
Q804
Q805
Q806
Q807
Q808
Q809
Q812
Q851
Q852
C201
C202
C207
C208
C801
C802
C803
C804
C805
C806
C807
C808
C809
C810
C811
C812
C813
C814
C815
C816
C817
C818
C820
C821
C823
C825
C826
C827
C829
C830
C831
C832
C833
C836
C837
C840
C841
C842
C848
C849
R201
R202
R203
R204
R205
R206
R207
R217
R228
R299
R801
R802
R803
R804
R805
R806
R808
R809
R810
R811
R812
R813
R814
R815
R816
R817
R818
R819
R820
R822
R823
R824
R825
R826
R827
R828
R832
R833
R834
R835
R836
R837
R838
R839
R850
R858
JW201
JW202
JW203
JW205
JW207
JW208
JW209
JW210
JW211
JW212
JW214
JW215
JW217
JW218
JW219
JW220
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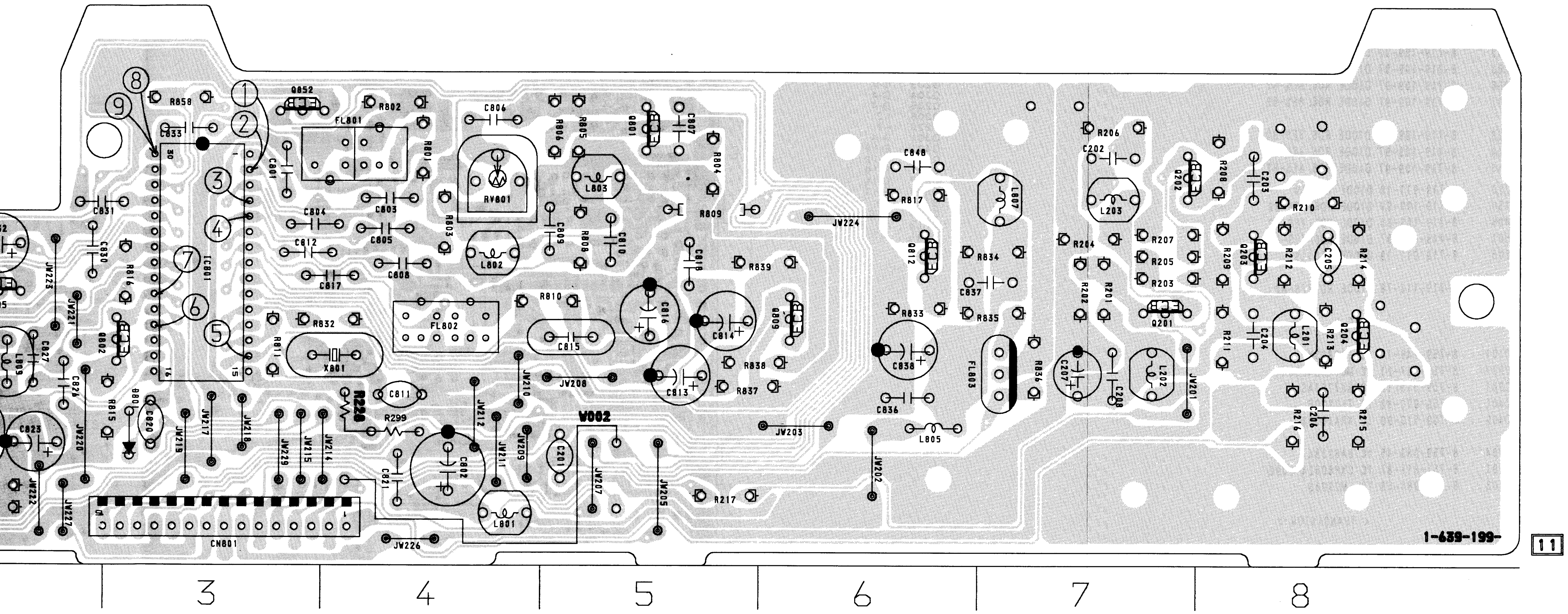
JW227
JW229
1
14
15
30


IC801
CN801
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
FL801
FL802
FL803
RV801
X801
L801
L802
L803
L805
L807
L201
L202
L203
Q201
Q202
Q203
Q204
Q801
Q802
Q809
Q812
Q852
D801
V002
R229
R299
JW224
JW203
JW202
JW226
1-639-199-
11
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8

PC-54 BOARD, COMPLETE

****

		< DIODE >	
D801	8-719-911-19	DIODE 1SS119	
		< IC >	
IC801	8-759-320-78	IC	HA118016NT
		< TRANSISTOR >	
Q201	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q202	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q203	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q204	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q801	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q802	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q804	8-729-900-80	TRANSISTOR	DTC114ES
Q805	8-729-920-68	TRANSISTOR	2SA933S-QRT
Q806	8-729-900-89	TRANSISTOR	DTC144ES
Q807	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q808	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q809	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q812	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q851	8-729-903-02	TRANSISTOR	DTA143XS
Q852	8-729-900-89	TRANSISTOR	DTC144ES

MA-88 (SERVO/SYSTEM CONTROL AUDIO, TUNER) PRINTED WIRING BOARDS

— Ref. No. MA-88 BOARD: 4000 series —

* A-6756-161-A MA-88 BOARD, COMPLETE (AEP MODEL)
****
* A-6756-165-A MA-88 BOARD, COMPLETE (VP MODEL)
****
* A-6756-166-A MA-88 BOARD, COMPLETE (CP MODEL)
****
* A-6756-168-A MA-88 BOARD, COMPLETE (UB MODEL)
****
* A-6756-171-A MA-88 BOARD, COMPLETE (EI MODEL)
****

< DIODE >

D201	8-719-974-59	DIODE 1SR139-100
D202	8-719-109-97	DIODE RD6.8ES-B2
D203	8-719-109-97	DIODE RD6.8ES-B2
D206	8-719-109-97	DIODE RD6.8ES-B2
D207	8-719-109-97	DIODE RD6.8ES-B2
D208	8-719-109-97	DIODE RD6.8ES-B2
D209	8-719-109-97	DIODE RD6.8ES-B2
D210	8-719-109-97	DIODE RD6.8ES-B2
D220	8-719-911-19	DIODE 1SS119
D250	8-719-109-97	DIODE RD6.8ES-B2
D404	8-719-109-85	DIODE RD5.1ES-B2
D501	8-719-109-97	DIODE RD6.8ES-B2
D505	8-719-911-19	DIODE 1SS119
D701	8-719-110-78	DIODE RD33ES-B2

< IC >

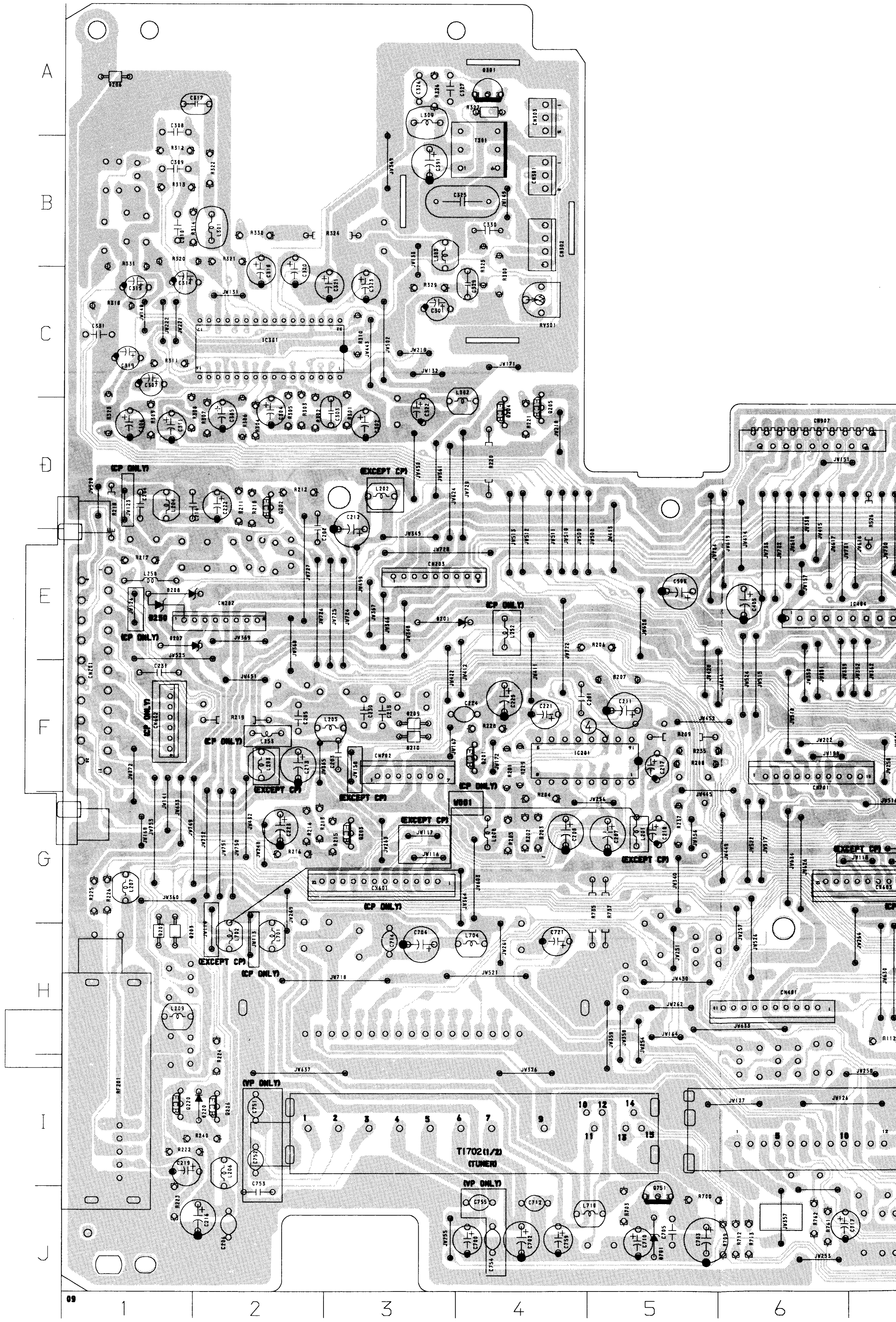
IC101	8-759-246-14	IC TA8823N
IC201	8-759-007-21	IC MC74HC4053N
IC301	8-759-513-18	IC BA7767AS
IC401	8-759-990-82	IC TL082CP
IC402	8-759-513-90	IC XRA10358
IC404	8-759-983-45	IC BA6238A
IC501	8-752-817-87	IC CXP80624-209Q
IC703	8-759-981-68	IC LM2903S

< TRANSISTOR >

Q201	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q202	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q203	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q204	8-729-920-68	TRANSISTOR	2SA933S-QRT
Q205	8-729-900-89	TRANSISTOR	DTC144ES
Q206	8-729-920-68	TRANSISTOR	2SA933S-QRT
Q220	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q301	8-729-111-55	TRANSISTOR	2SD1312-K
Q401	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q402	8-729-920-68	TRANSISTOR	2SA933S-QRT
Q501	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q502	8-729-900-89	TRANSISTOR	DTC144ES
Q503	8-729-900-89	TRANSISTOR	DTC144ES
Q710	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q711	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q712	8-729-920-68	TRANSISTOR	2SA933S-QRT
Q751	8-729-111-55	TRANSISTOR	2SD1312-K

MA-88	BOARD
D201	E-3
D202	H-1
D203	H-1
D206	A-1
D207	E-1
D208	E-1
D209	F-3
D210	F-3
D220	I-2
D250	E-1
D404	E-10
D501	F-10
D505	G-10
D701	J-5
IC101	I-11
IC201	F-4
IC301	C-2
IC401	E-11
IC402	E-10
IC404	E-7
IC501	G-11
IC703	J-9
Q201	F-4
Q202	D-2
Q203	G-3
Q204	D-4
Q205	D-4
Q206	I-2
Q220	I-1
Q301	A-4
Q401	E-12
Q402	E-12
Q501	F-10
Q502	G-10
Q503	F-13
Q710	I-9
Q711	I-10
Q712	I-9
Q751	J-5

MA-88 BOARD

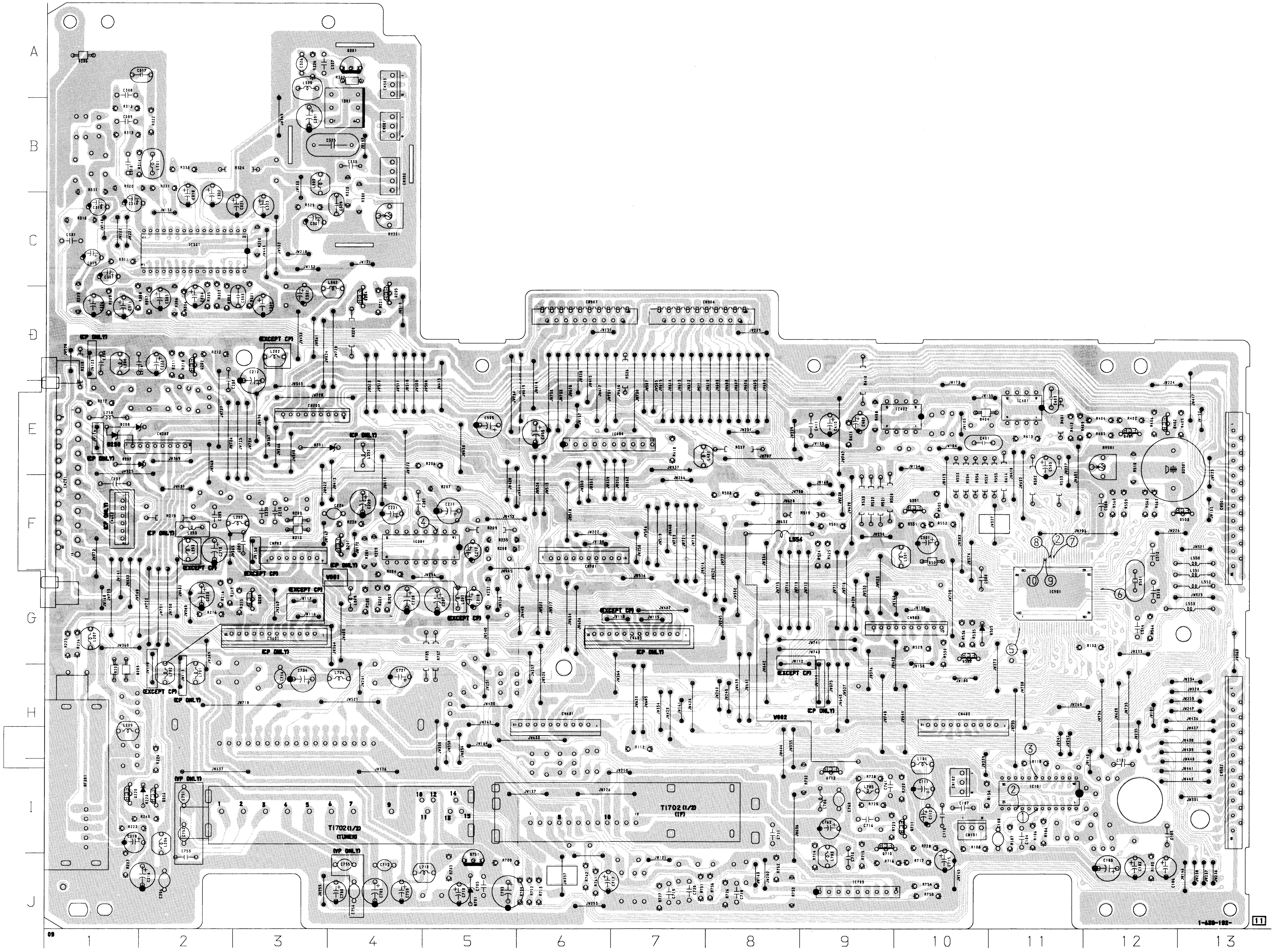


DIO, TUNER) PRINTED WIRING BOARDS

MA-88 BOARD

D201	E-3
D202	H-1
D203	H-1
D206	A-1
D207	E-1
D208	E-1
D209	F-3
D210	F-3
D220	I-2
D250	E-1
D404	E-10
D501	F-10
D505	G-10
D701	J-5
IC101	I-11
IC201	F-4
IC301	C-2
IC401	E-11
IC402	E-10
IC404	E-7
IC501	G-11
IC703	J-9
Q201	F-4
Q202	D-2
Q203	G-3
Q204	D-4
Q205	D-4
Q206	I-2
Q220	I-1
Q301	A-4
Q401	E-12
Q402	E-12
Q501	F-10
Q502	G-10
Q503	F-13
Q710	I-9
Q711	I-10
Q712	I-9
Q751	J-5

MA-88 BOARD


A
B
C
D
E
F
G
H
I
J
1
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6
7
8
9
10
11
12
13
IC301
IC501
IC101
T1702(1/2) (TUNER)
T1702(1/2) (IF)
(CP ONLY)
(EXCEPT CP)
(VP ONLY)
1-659-192-

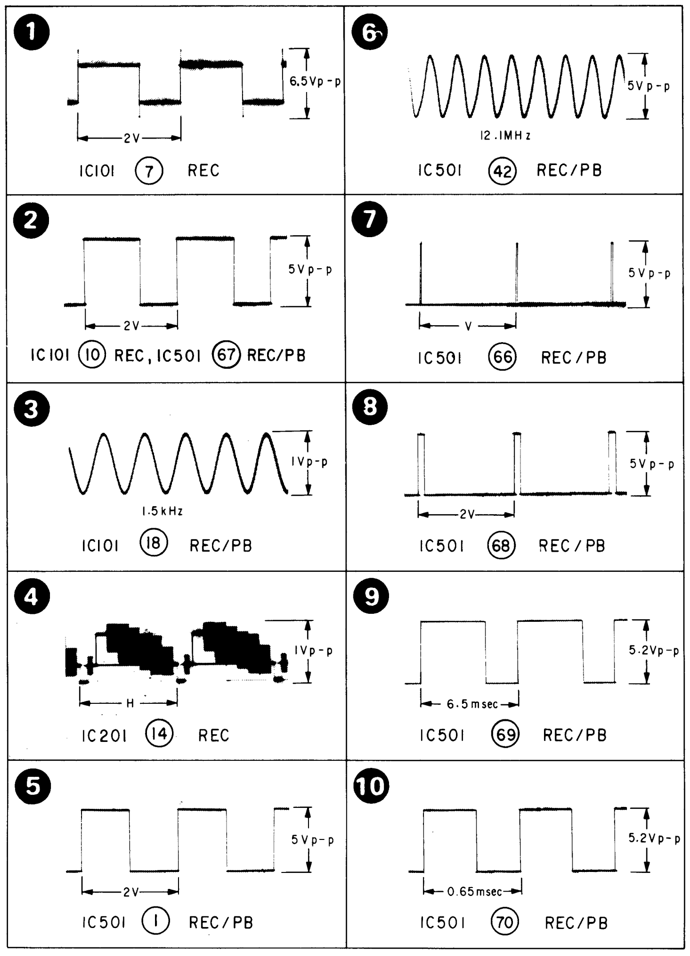
- **SIGNAL PATH**

	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷▷	
Drum servo (speed and phase)		▷▷▷	
Capstan speed servo		➢	
Capstan phase servo	➡»	➢»	⊃»
Capstan servo (speed and phase)		➢»»	
Ref. signal	➡		⊃

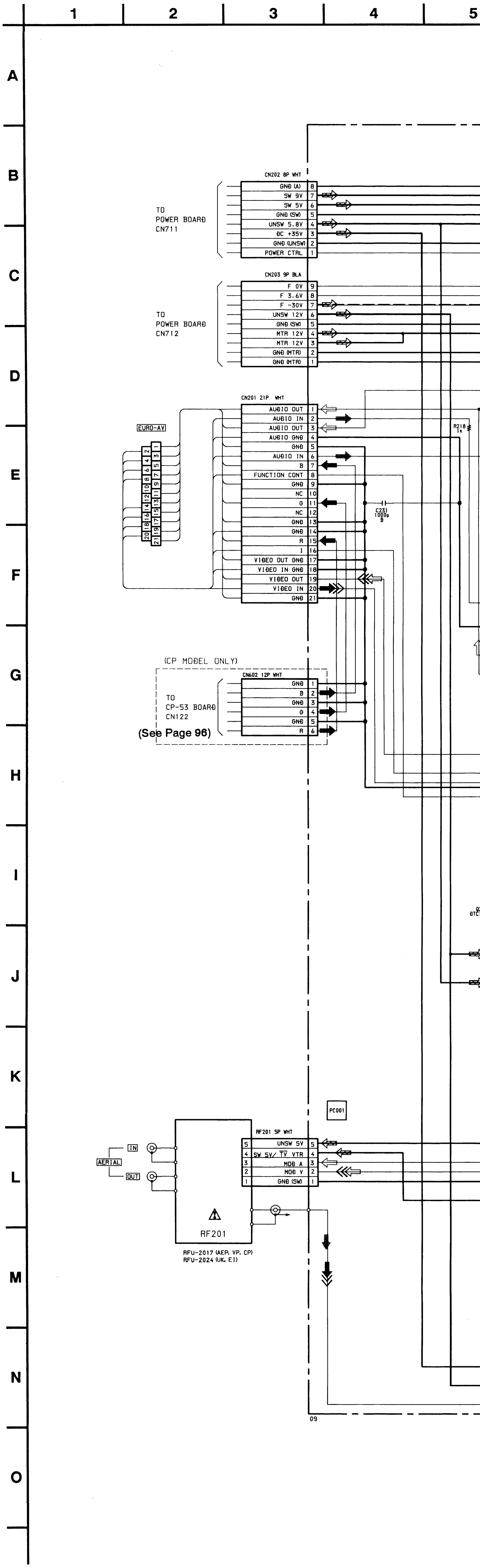
- **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡		➡»	➡
PB	⇨		⇨»	⇨

MA-88 BOARD



— Ref. No. MA-88 BOARD: 4000 series —



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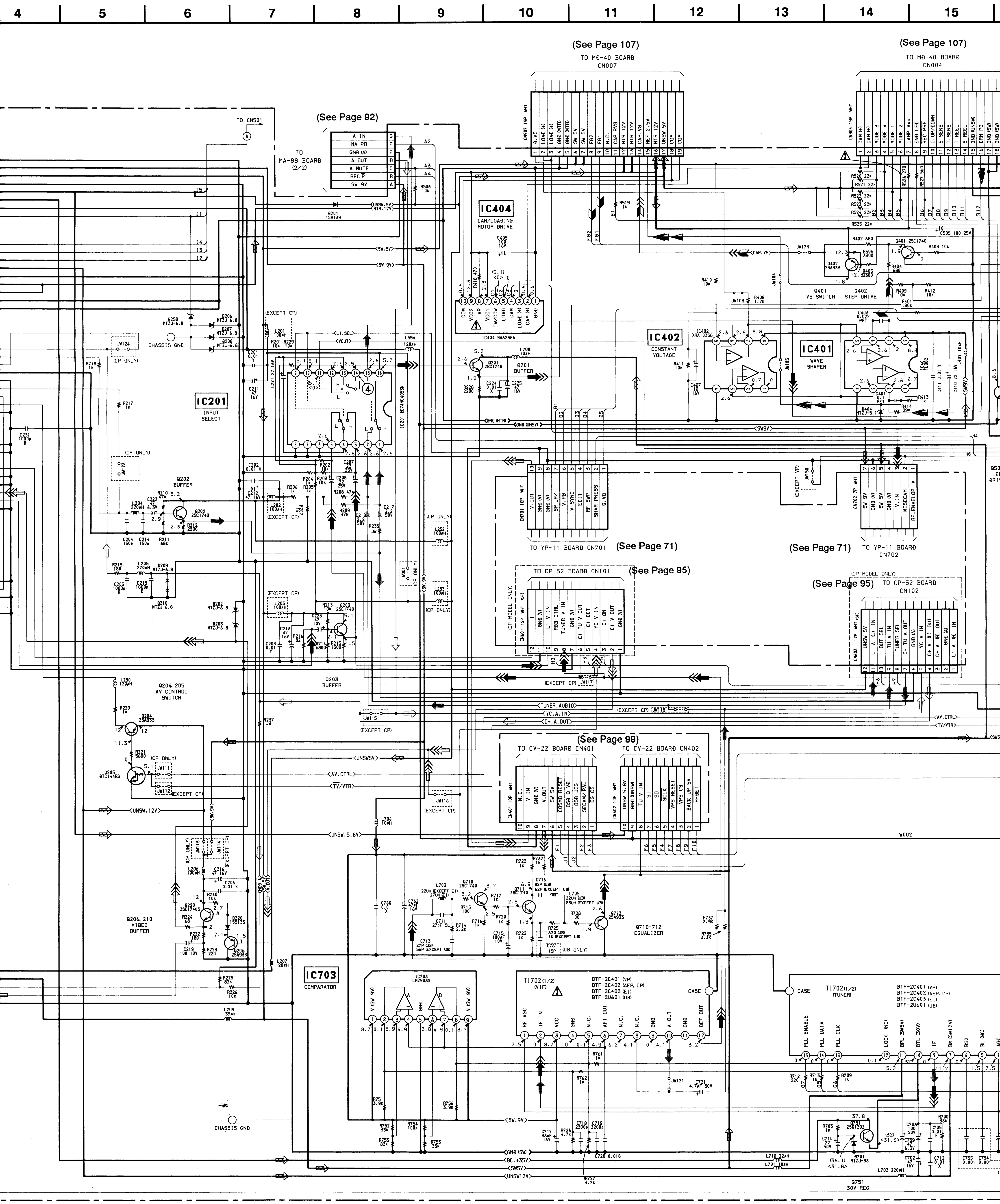
5
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
CN202 8P WHT
GND (A)
SW 9V
SW 5V
GND (SW)
UNSW 5.8V
DC +35V
GND (UNSW)
POWER CTRL
TO POWER BOARD CN711
CN203 9P BLA
F 0V
F 3.6V
F -30V
UNSW 12V
GND (SW)
MTR 12V
MTR 12V
GND (MTR)
GND (MTR)
TO POWER BOARD CN712
CN201 21P WHT
EURO-AV
AUDIO OUT
AUDIO IN
AUDIO OUT
AUDIO GND
GND
AUDIO IN
B
FUNCTION CONT
GND
NC
G
NC
GND
GND
R
I
VIDEO OUT GND
VIDEO IN GND
VIDEO OUT
VIDEO IN
GND
R218 1k
C231 1000p B
(CP MODEL ONLY)
CN602 12P WHT
GND
B
GND
G
GND
R
TO CP-53 BOARD CN122
(See Page 96)
PC001
RF201 5P WHT
UNSW 5V
SW 5V/ TV VTR
MOD A
MOD V
GND (SW)
IN
OUT
AERIAL
RF201
RFU-2017 (AEP, VP, CP)
RFU-2024 (UK, E1)
09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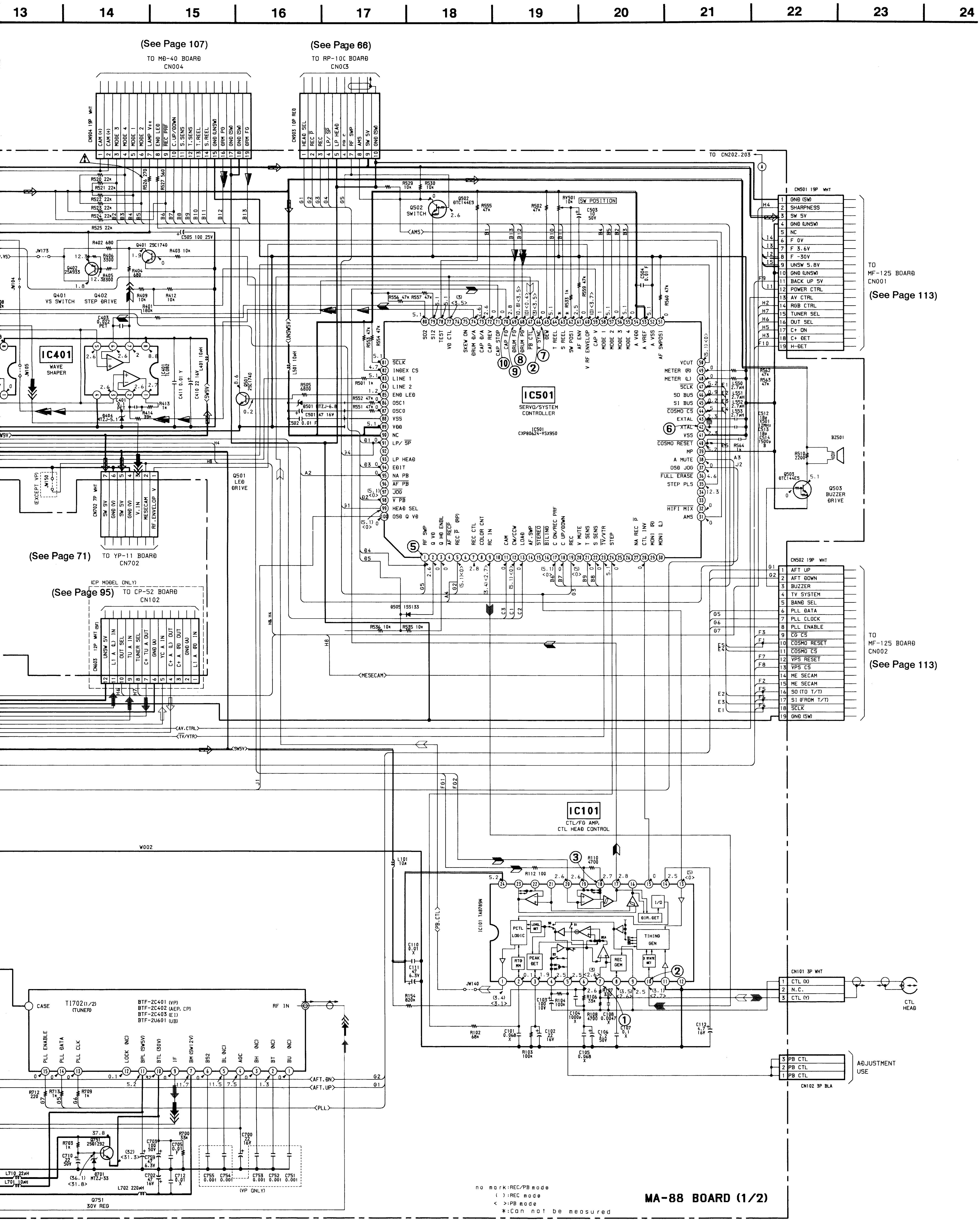
12
13
14
15
(See Page 107)
TO MD-40 BOARD CN007
(See Page 107)
TO MD-40 BOARD CN004
(See Page 92)
TO MA-88 BOARD (2/2)
TO CN501
A IN
NA PB
GND (A)
A OUT
A MUTE
REC P
SW 9V
IC404
CAM/LOADING MOTOR DRIVE
IC404 BA6238A
IC402
CONSTANT VOLTAGE
IC401
WAVE SHAPER
Q401 VS SWITCH
Q402 STEP DRIVE
IC201
INPUT SELECT
IC201 MC74HC4053N
Q201 BUFFER
Q202 BUFFER
Q203 BUFFER
Q204, 205 AV CONTROL SWITCH
Q206, 210 VIDEO BUFFER
CHASSIS GND
(CP ONLY)
(EXCEPT CP)
TO YP-11 BOARD CN701
(See Page 71)
TO YP-11 BOARD CN702
(See Page 71)
TO CP-52 BOARD CN101
(See Page 95)
TO CP-52 BOARD CN102
(See Page 95)
(CP MODEL ONLY)
(See Page 99)
TO CV-22 BOARD CN401
TO CV-22 BOARD CN402
Q710-712 EQUALIZER
IC703
COMPARATOR
IC703 LM2903S
TI702 (1/2) (VIF)
BTF-2C401 (VP)
BTF-2C402 (AEP, CP)
BTF-2C403 (E1)
BTF-2U601 (UB)
TI702 (1/2) (TUNER)
CASE
Q751 30V REG
W002
<UNSW.5V>
<MTR.12V>
<SW.5V>
<SW.9V>
<CAP.VS>
<SW9V>
<GND (MTR)>
<GND (UNSV)>
<L1.SEL>
<YCUT>
<TUNER.AUDIO>
<YC.A.IN>
<C+.A.OUT>
<UNSW5V>
<AV.CTRL>
<TV/VTR>
<UNSW.12V>
<UNSW.5.8V>
<SW.9V>
<GND (SW)>
<DC.+35V>
<SW5V>
<UNSW12V>


13
14
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17
18
19
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21
22
23
24
(See Page 107)
TO MD-40 BOARD
CN004
(See Page 66)
TO RP-10C BOARD
CN003
TO CN202,203
CN501 19P WHT
GND (SW)
SHARPNESS
SW 5V
GND (UNSW)
NC
F 0V
F 3.6V
F -30V
UNSW 5.8V
GND (UNSW)
BACK UP 5V
POWER CTRL
AV CTRL
RGB CTRL
TUNER SEL
OUT SEL
C+ ON
C+ DET
H-DET
TO
MF-125 BOARD
CN001
(See Page 113)
IC401
WAVE SHAPER
Q401
VS SWITCH
Q402
STEP DRIVE
Q502
SWITCH
SW POSITION
IC501
SERVO/SYSTEM CONTROLLER
IC501
CXP80624-YSX950
Q501
LED DRIVE
Q503
BUZZER DRIVE
BZ501
(See Page 71)
TO YP-11 BOARD
CN702
(CP MODEL ONLY)
(See Page 95)
TO CP-52 BOARD
CN102
CN502 19P WHT
AFT UP
AFT DOWN
BUZZER
TV SYSTEM
BAND SEL
PLL DATA
PLL CLOCK
PLL ENABLE
CG CS
COSMO RESET
COSMO CS
VPS RESET
VPS CS
ME SECAM
ME SECAM
SO (TO T/T)
SI (FROM T/T)
SCLK
GND (SW)
TO
MF-125 BOARD
CN002
(See Page 113)
<MESECAM>
<AV.CTRL>
<TV/VTR>
<SW5V>
IC101
CTL/FG AMP.
CTL HEAD CONTROL
IC101 TA8789N
CN101 3P WHT
CTL (X)
N.C.
CTL (Y)
CTL HEAD
CN102 3P BLA
PB CTL
PB CTL
PB CTL
ADJUSTMENT USE
TU702(1/2)
(TUNER)
BTF-2C401 (VP)
BTF-2C402 (AEP, CP)
BTF-2C403 (EI)
BTF-2U601 (UB)
CASE
RF IN
PLL ENABLE
PLL DATA
PLL CLK
LOCK (NC)
BPL (5V5V)
BTL (30V)
IF
BM (SW12V)
BS2
BL (NC)
AGC
BH (NC)
BT (NC)
BU (NC)
<AFT.DN>
<AFT.UP>
<PLL>
Q751
30V REG
(VP ONLY)
no mark:REC/PB mode
( ):REC mode
< >:PB mode
*:Can not be measured
MA-88 BOARD (1/2)

MA-88 (AUDIO) PRINTED WIRING BOARDS

— Ref. No. MA-88 BOARD: 4000 series —

* A-6756-161-A MA-88 BOARD, COMPLETE (AEP MODEL)
****
* A-6756-165-A MA-88 BOARD, COMPLETE (VP MODEL)
****
* A-6756-166-A MA-88 BOARD, COMPLETE (CP MODEL)
****
* A-6756-168-A MA-88 BOARD, COMPLETE (UB MODEL)
****
* A-6756-171-A MA-88 BOARD, COMPLETE (EI MODEL)
****

< DIODE >

D201	8-719-974-59	DIODE	1SR139-100
D202	8-719-109-97	DIODE	RD6.8ES-B2
D203	8-719-109-97	DIODE	RD6.8ES-B2
D206	8-719-109-97	DIODE	RD6.8ES-B2
D207	8-719-109-97	DIODE	RD6.8ES-B2
D208	8-719-109-97	DIODE	RD6.8ES-B2
D209	8-719-109-97	DIODE	RD6.8ES-B2
D210	8-719-109-97	DIODE	RD6.8ES-B2
D220	8-719-911-19	DIODE	1SS119
D250	8-719-109-97	DIODE	RD6.8ES-B2
D404	8-719-109-85	DIODE	RD5.1ES-B2
D501	8-719-109-97	DIODE	RD6.8ES-B2
D505	8-719-911-19	DIODE	1SS119
D701	8-719-110-78	DIODE	RD33ES-B2

< IC >

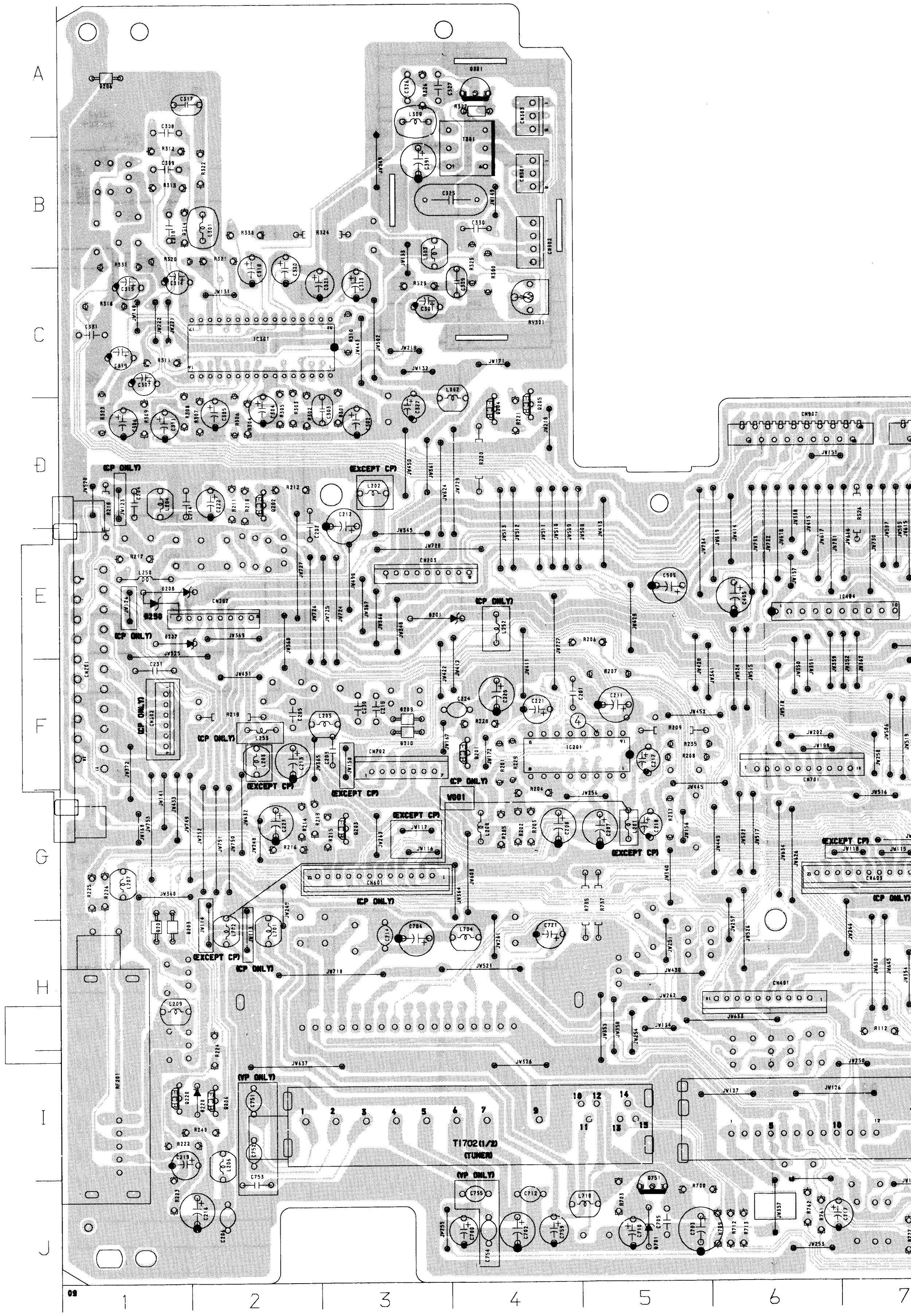
IC101	8-759-246-14	IC	TA8823N
IC201	8-759-007-21	IC	MC74HC4053N
IC301	8-759-513-18	IC	BA7767AS
IC401	8-759-990-82	IC	TL082CP
IC402	8-759-513-90	IC	XRA10358
IC404	8-759-983-45	IC	BA6238A
IC501	8-752-817-87	IC	CXP80624-209Q
IC703	8-759-981-68	IC	LM2903S

< TRANSISTOR >

Q201	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q202	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q203	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q204	8-729-920-68	TRANSISTOR	2SA933S-QRT
Q205	8-729-900-89	TRANSISTOR	DTC144ES
Q206	8-729-920-68	TRANSISTOR	2SA933S-QRT
Q220	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q301	8-729-111-55	TRANSISTOR	2SD1312-K
Q401	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q402	8-729-920-68	TRANSISTOR	2SA933S-QRT
Q501	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q502	8-729-900-89	TRANSISTOR	DTC144ES
Q503	8-729-900-89	TRANSISTOR	DTC144ES
Q710	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q711	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q712	8-729-920-68	TRANSISTOR	2SA933S-QRT
Q751	8-729-111-55	TRANSISTOR	2SD1312-K

MA-88	BOARD
D201	E-3
D202	H-1
D203	H-1
D206	A-1
D207	E-1
D208	E-1
D209	F-3
D210	F-3
D220	I-2
D250	E-1
D404	E-10
D501	F-10
D505	G-10
D701	J-5
IC101	I-11
IC201	F-4
IC301	C-2
IC401	E-11
IC402	E-10
IC404	E-7
IC501	G-11
IC703	J-9
Q201	F-4
Q202	D-2
Q203	G-3
Q204	D-4
Q205	D-4
Q206	I-2
Q220	I-1
Q301	A-4
Q401	E-12
Q402	E-12
Q501	F-10
Q502	G-10
Q503	F-13
Q710	I-9
Q711	I-10
Q712	I-9
Q751	J-5

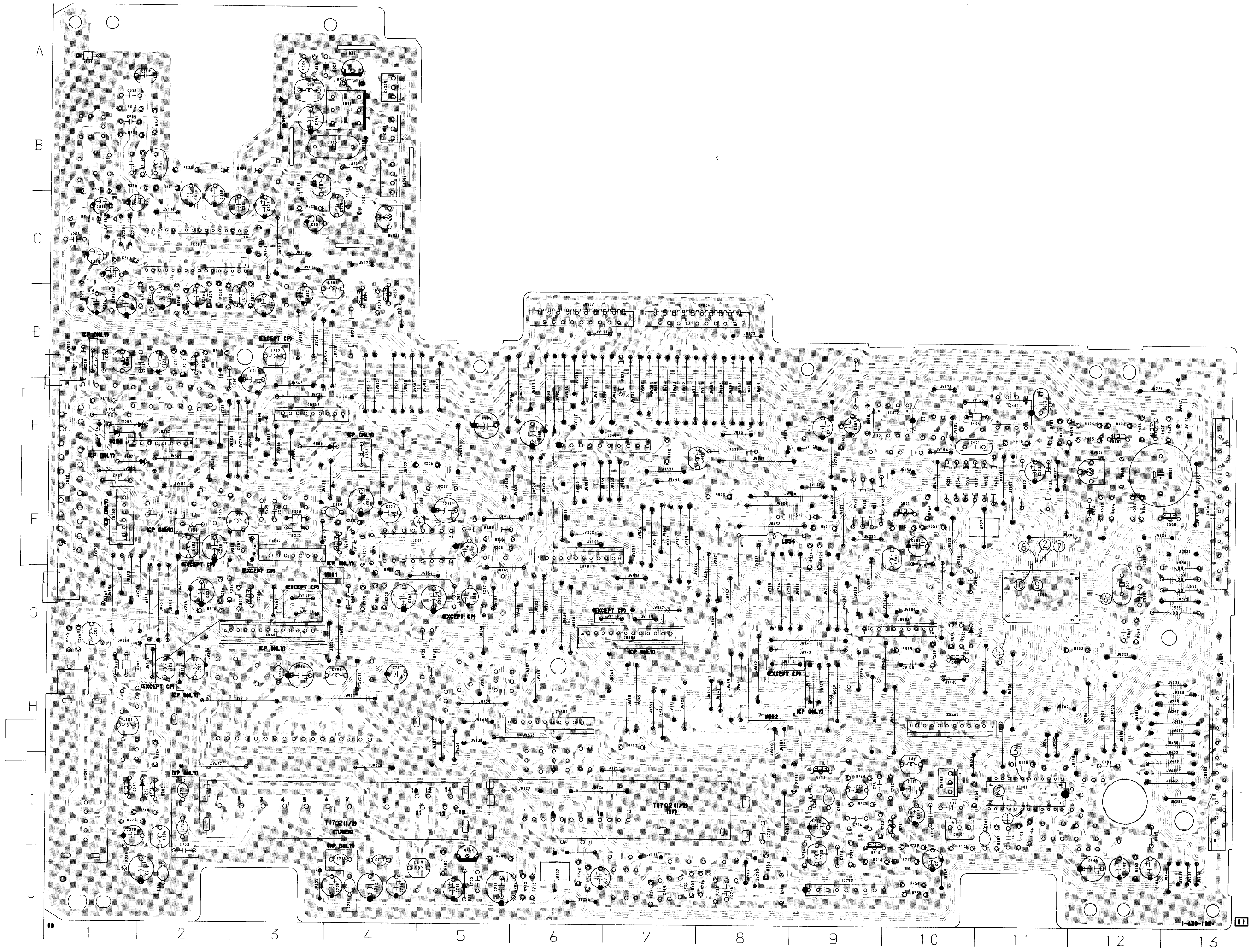
MA-88 BOARD



MA-88 BOARD

D201	E-3
D202	H-1
D203	H-1
D206	A-1
D207	E-1
D208	E-1
D209	F-3
D210	F-3
D220	I-2
D250	E-1
D404	E-10
D501	F-10
D505	G-10
D701	J-5
IC101	I-11
IC201	F-4
IC301	C-2
IC401	E-11
IC402	E-10
IC404	E-7
IC501	G-11
IC703	J-9
Q201	F-4
Q202	D-2
Q203	G-3
Q204	D-4
Q205	D-4
Q206	I-2
Q220	I-1
Q301	A-4
Q401	E-12
Q402	E-12
Q501	F-10
Q502	G-10
Q503	F-13
Q710	I-9
Q711	I-10
Q712	I-9
Q751	J-5

MA-88 BOARD


A
B
C
D
E
F
G
H
I
J
1
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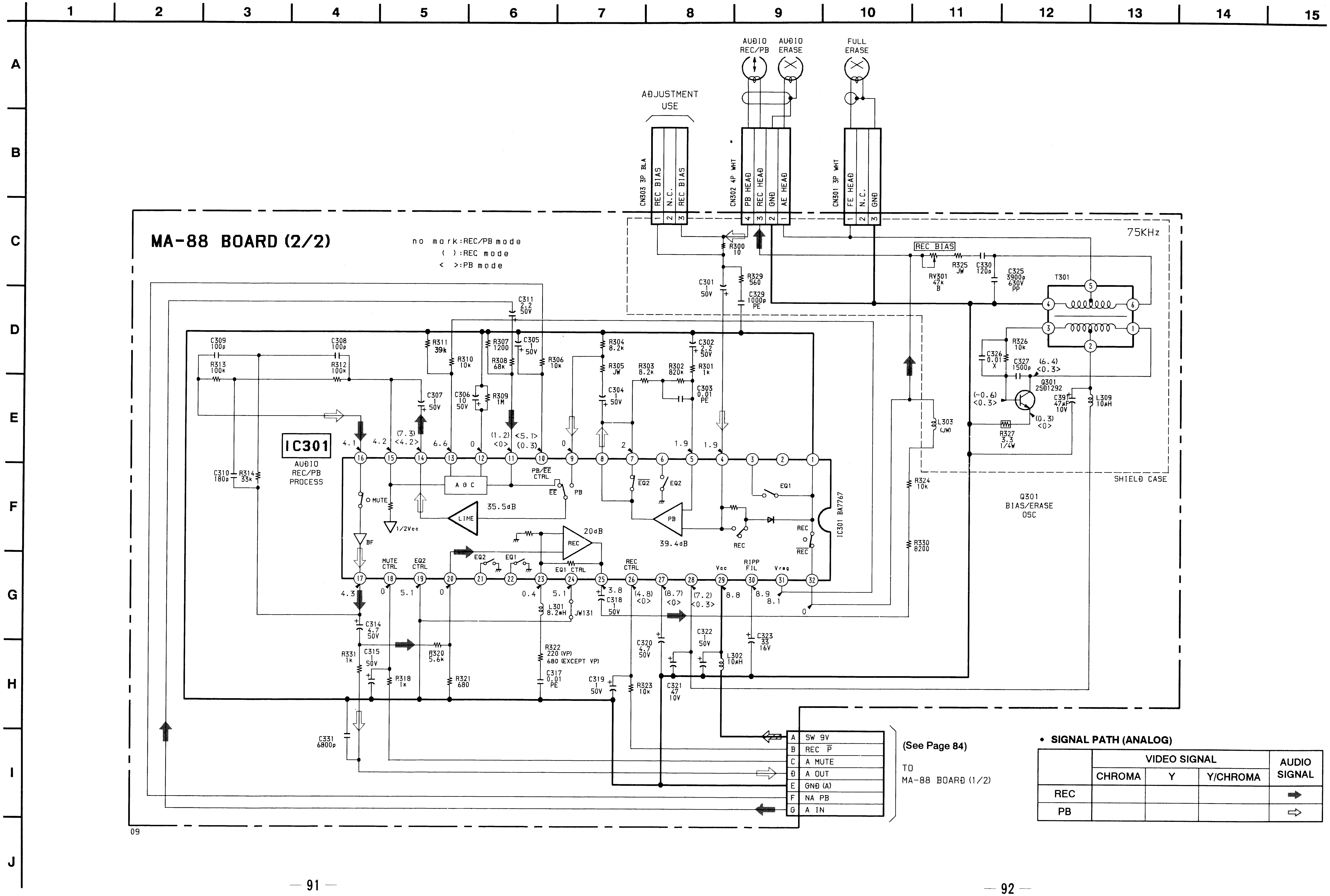
12
13
(CP ONLY)
(EXCEPT CP)
(VP ONLY)
T1702(1/2) (TUNER)
T1702(1/2) (IF)
IC201
IC301
IC501
IC101
IC703
1-659-182-
11

MA-88 (AUDIO) SCHEMATIC DIAGRAMS

— Ref. No. MA-88 BOARD: 4000 series —


1
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A
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G
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I
J
MA-88 BOARD (2/2)
no mark:REC/PB mode
( ):REC mode
< >:PB mode
AUDIO REC/PB
AUDIO ERASE
FULL ERASE
ADJUSTMENT USE
CN303 3P BLA
REC BIAS
N.C.
REC BIAS
CN302 4P WHT
PB HEAD
REC HEAD
GND
AE HEAD
CN301 3P WHT
FE HEAD
N.C.
GND
75KHz
REC BIAS
R300 10
C301 1 50V
R329 560
C329 1000p PE
R325 JW
C330 120p
RV301 47k B
C325 3900p 630V PP
T301
R326 10k
C326 0.01 X
C327 1500p
(6.4) <0.3>
Q301 2SD1292
(−0.6) <0.3>
C391 47μF 10V
L309 10μH
(0.3) <0>
R327 3.3 1/4W
L303 (JW)
SHIELD CASE
R324 10k
Q301 BIAS/ERASE OSC
R330 8200
C311 2.2 50V
C309 100p
C308 100p
R313 100k
R312 100k
R311 39k
R310 10k
R307 1200
R308 68k
C305 1 50V
R306 10k
R304 8.2k
R305 JW
R303 8.2k
R302 820k
C302 2.2 50V
R301 1k
C303 0.01 PE
C304 1 50V
C307 1 50V
C306 10 50V
R309 1M
IC301
AUDIO REC/PB PROCESS
C310 180p
R314 33k
IC301 BA7767
AGC
PB/EE CTRL
EE
PB
MUTE
1/2Vcc
LINE
35.5dB
BF
REC
20dB
PB
39.4dB
EQ2
EQ1
REC
MUTE CTRL
EQ2 CTRL
EQ1 CTRL
REC CTRL
Vcc
RIPP FIL
Vreg
4.1
4.2
(7.3) <4.2>
6.6
0
(1.2) <0>
<5.1> (0.3)
0
2
1.9
1.9
4.3
0
5.1
0
0.4
5.1
3.8
(4.8) <0>
(8.7) <0>
(7.2) <0.3>
8.8
8.9
8.1
0
C314 4.7 50V
C315 1 50V
R331 1k
R318 1k
R320 5.6k
R321 680
L301 8.2mH
JW131
C318 1 50V
R322 220 (VP) 680 (EXCEPT VP)
C317 0.01 PE
C319 1 50V
R323 10k
C320 4.7 50V
C321 47 10V
C322 1 50V
L302 10mH
C323 33 16V
C331 6800p
A SW 9V
B REC P
C A MUTE
D A OUT
E GND (A)
F NA PB
G A IN
(See Page 84)
TO MA-88 BOARD (1/2)
09

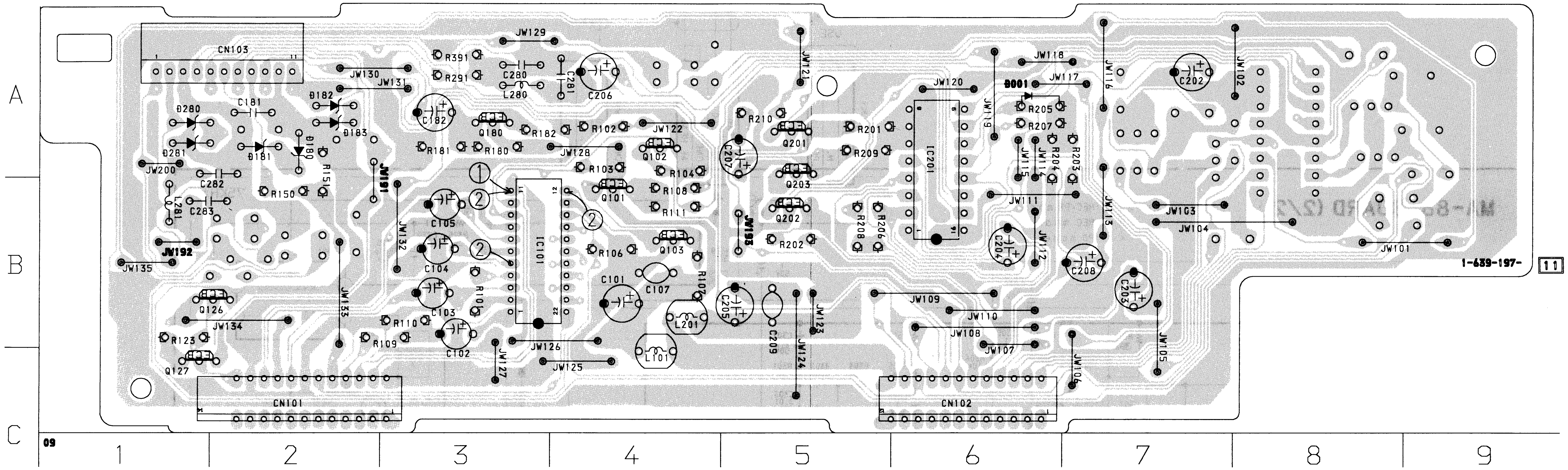
- **SIGNAL PATH (ANALOG)**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				➡
PB				⇨

CP-52 (VIDEO/AUDIO SELECTOR), CP-53 (CANAL PLUS) PRINTED WIRING BOARDS

— Ref. No. CP-52 BOARD: 5000 series, CP-53 BOARD: 6000 series —

CP-52 BOARD (CP MODEL)


A
B
C
1
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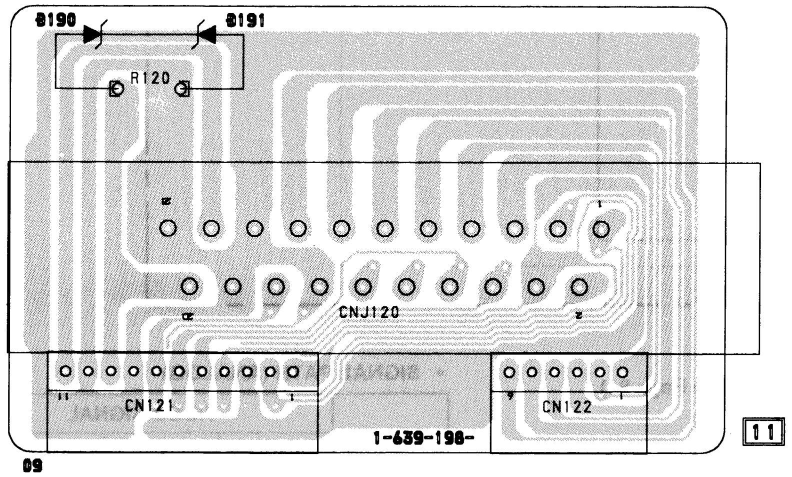
09
CN103
CN101
CN102
IC101
IC201
JW129
JW130
JW131
R391
R291
C280
L280
C281
C206
D182
D183
D280
C181
D281
D181
D180
JW200
C182
Q180
R182
R102
JW122
R181
R180
JW128
Q102
R210
Q201
C207
R201
R209
JW120
D001
R205
R207
JW118
JW117
JW116
C202
JW102
JW119
R203
R204
JW115
JW114
C282
L281
C283
R150
R151
JW191
JW192
JW135
C105
C104
C103
C102
R103
Q101
R104
R108
R111
R106
Q103
JW193
Q203
Q202
R202
R208
R206
C204
JW111
JW113
JW112
C208
JW103
JW104
JW101
C203
C101
C107
R107
C205
C209
L201
L101
JW109
JW110
JW108
JW107
JW106
JW105
JW123
JW124
JW126
JW125
JW127
JW132
JW133
JW134
Q126
Q127
R123
R110
R109
R105
1-639-197-
11

CP-52 BOARD	
D001	A-6
D180	A-2
D181	A-2
D182	A-2
D183	A-2
D280	A-1
D281	A-1
IC101	B-3
IC201	A-6
Q101	B-4
Q102	A-4
Q103	B-4
Q126	B-1
Q127	C-1
Q180	A-3
Q201	A-5
Q202	B-5
Q203	B-5

CP-53 BOARD (CP MODEL)


D190
D191
R120
CNJ120
CN121
CN122
1-639-198-
11
09

CP-53 BOARD (CP MODEL)
****

< DIODE >

D190	8-719-109-97	DIODE	RD6.8ES-B2
D191	8-719-109-97	DIODE	RD6.8ES-B2

CP-52 BOARD, COMPLETE (CP MODEL)
****

< DIODE >

D001	8-719-940-82	DIODE	SLR-34MC3
D180	8-719-109-97	DIODE	RD6.8ES-B2
D181	8-719-109-97	DIODE	RD6.8ES-B2
D182	8-719-109-97	DIODE	RD6.8ES-B2
D183	8-719-109-97	DIODE	RD6.8ES-B2
D280	8-719-109-97	DIODE	RD6.8ES-B2
D281	8-719-109-97	DIODE	RD6.8ES-B2

< IC >

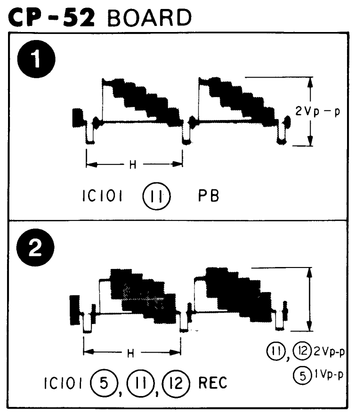
IC101	8-759-504-94	IC	BA7630S
IC201	8-759-509-16	IC	XRU4053B

< TRANSISTOR >

Q101	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q102	8-729-900-89	TRANSISTOR	DTC144ES
Q103	8-729-920-68	TRANSISTOR	2SA933S
Q126	8-729-900-89	TRANSISTOR	DTC144ES
Q127	8-729-920-68	TRANSISTOR	2SA933S
Q180	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q201	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q202	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q203	8-729-119-78	TRANSISTOR	2SC2785-HFE

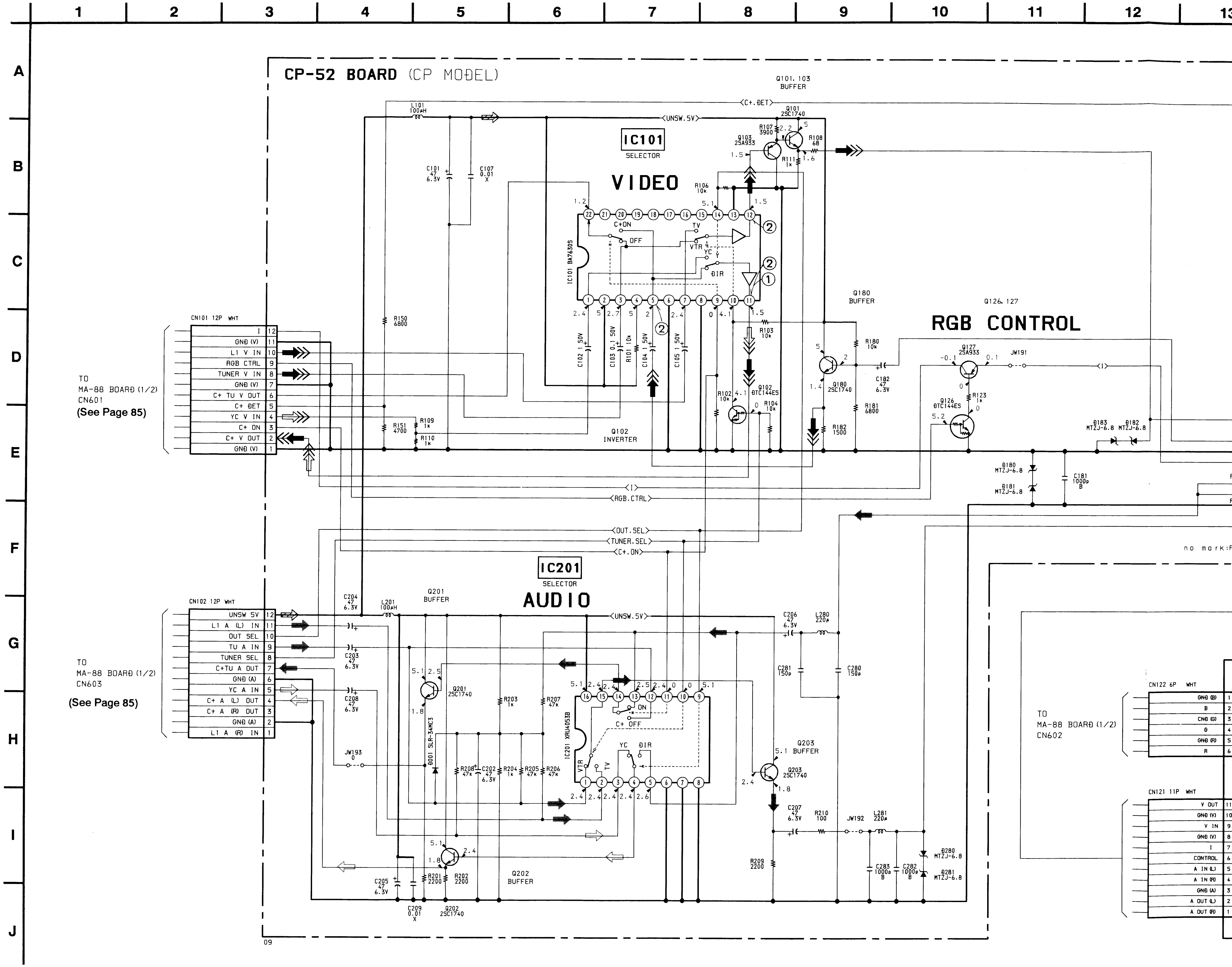
CP-52 (VIDEO/AUDIO SELECTOR), CP-53 (CANAL PLUS) SCHEMATIC DIAGRAMS

— Ref. No. CP-52 BOARD: 5000 series, CP-53 BOARD: 6000 series —



- **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡		➡≫	➡
PB			⇨≫	⇨



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A
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C
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E
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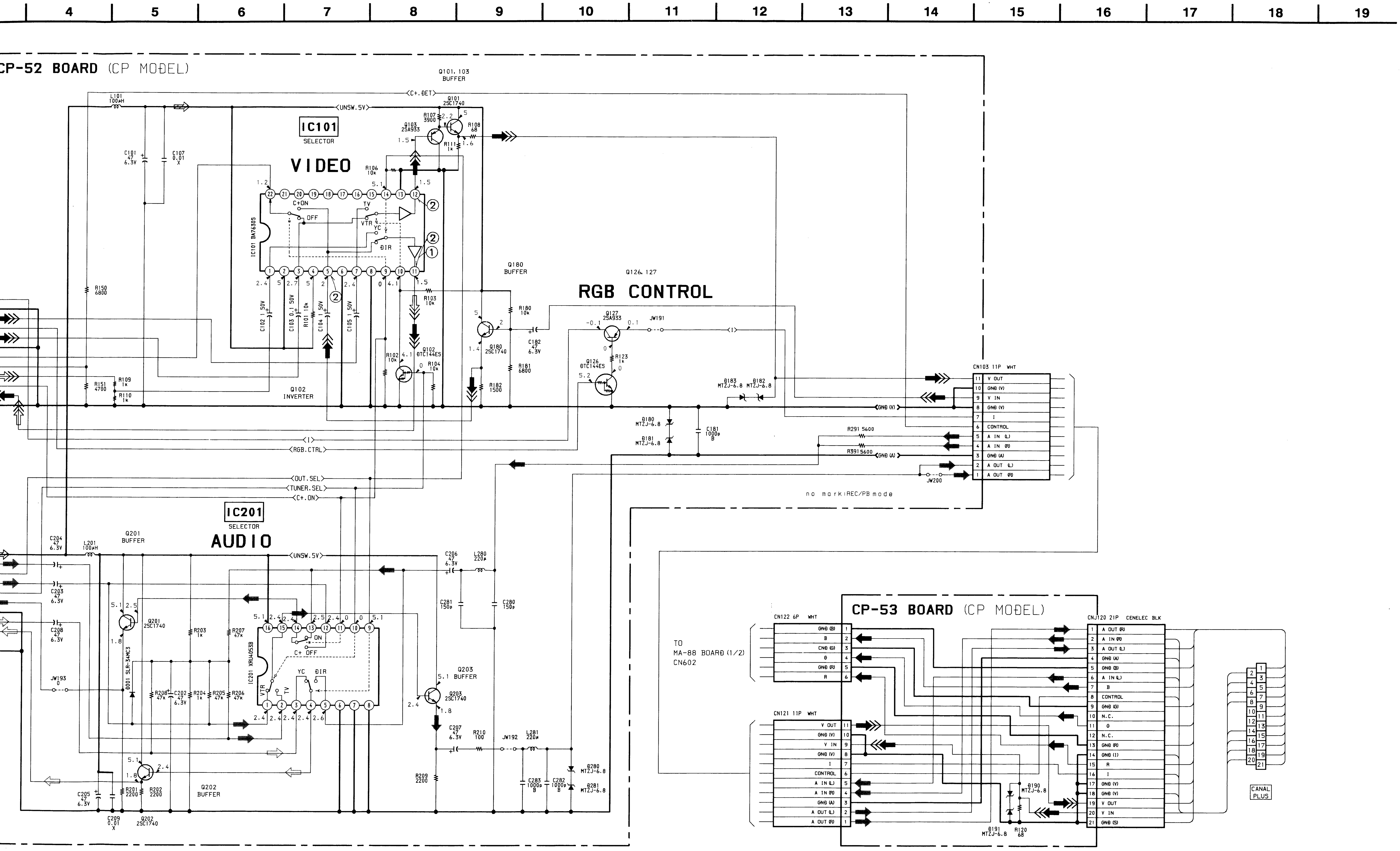
G
H
I
J
CP-52 BOARD (CP MODEL)
Q101, 103 BUFFER
IC101 SELECTOR
VIDEO
IC101 BA7630S
C+ON
OFF
TV
VTR
YC
DIR
L101 100μH
C101 47 6.3V
C107 0.01
R150 6800
R151 4700
R109 1k
R110 1k
C102 1 50V
C103 0.1 50V
R101 10k
C104 1 50V
C105 1 50V
R106 10k
Q101 2SC1740
Q103 2SA933
R107 3900
R108 68
R111 1k
R102 10k
R103 10k
R104 10k
Q102 DTC144ES
Q102 INVERTER
Q180 BUFFER
Q180 2SC1740
R180 10k
R181 6800
R182 1500
C182 47 6.3V
Q126, 127
RGB CONTROL
Q127 2SA933
Q126 DTC144ES
R123 1k
JW191
D180 MTZJ-6.8
D181 MTZJ-6.8
D182 MTZJ-6.8
D183 MTZJ-6.8
C181 1000p B
(C+.DET)
(UNSW.5V)
(I)
(RGB.CTRL)
(OUT.SEL)
(TUNER.SEL)
(C+.ON)
CN101 12P WHT
I
GND (V)
L1 V IN
RGB CTRL
TUNER V IN
GND (V)
C+ TU V OUT
C+ DET
YC V IN
C+ ON
C+ V OUT
GND (V)
TO MA-88 BOARD (1/2) CN601
(See Page 85)
CN102 12P WHT
UNSW 5V
L1 A (L) IN
OUT SEL
TU A IN
TUNER SEL
C+TU A OUT
GND (A)
YC A IN
C+ A (L) OUT
C+ A (R) OUT
GND (A)
L1 A (R) IN
TO MA-88 BOARD (1/2) CN603
(See Page 85)
IC201 SELECTOR
AUDIO
IC201 XRU4053B
ON
C+ OFF
YC
DIR
VTR
TV
C204 47 6.3V
L201 100μH
Q201 BUFFER
Q201 2SC1740
D001 SLR-34MC3
C203 47 6.3V
C208 47 6.3V
JW193
R203 1k
R207 47k
R208 47k
C202 47 6.3V
R204 1k
R205 47k
R206 47k
C205 47 6.3V
C209 0.01
R201 2200
R202 2200
Q202 2SC1740
Q202 BUFFER
C206 47 6.3V
L280 220μ
C281 150p
C280 150p
Q203 BUFFER
Q203 2SC1740
C207 47 6.3V
R210 100
JW192
L281 220μ
R209 2200
C283 1000p B
C282 1000p B
D280 MTZJ-6.8
D281 MTZJ-6.8
no mark:
CN122 6P WHT
GND (B)
B
GND (G)
G
GND (R)
R
TO MA-88 BOARD (1/2) CN602
CN121 11P WHT
V OUT
GND (V)
V IN
GND (V)
I
CONTROL
A IN (L)
A IN (R)
GND (A)
A OUT (L)
A OUT (R)
09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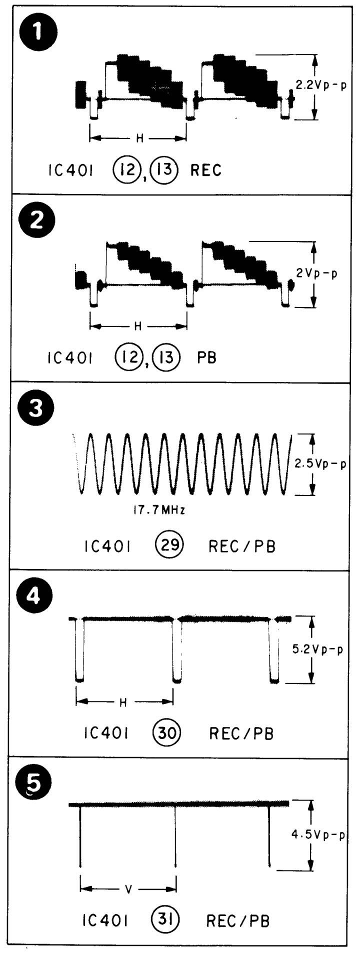
18
19
CP-52 BOARD (CP MODEL)
IC101
SELECTOR
VIDEO
IC101 BA7630S
C+ON
OFF
TV
VTR
YC
DIR
Q101, 103
BUFFER
Q101
2SC1740
Q103
2SA933
R107 3900
R108 68
R111 1k
R106 10k
L101 100μH
C101 47 6.3V
C107 0.01
<C+.DET>
<UNSW.5V>
C102 1 50V
C103 0.1 50V
R101 10k
C104 1 50V
C105 1 50V
R103 10k
Q102
DTC144ES
R102 10k
R104 10k
Q102
INVERTER
R150 6800
R151 4700
R109 1k
R110 1k
Q180
BUFFER
Q180
2SC1740
R180 10k
R181 6800
R182 1500
C182 47 6.3V
RGB CONTROL
Q126, 127
Q127
2SA933
Q126
DTC144ES
R123 1k
JW191
D183 MTZJ-6.8
D182 MTZJ-6.8
D180 MTZJ-6.8
D181 MTZJ-6.8
C181 1000p B
<I>
<RGB.CTRL>
<OUT.SEL>
<TUNER.SEL>
<C+.ON>
<GND (V)>
<GND (A)>
R291 5600
R391 5600
JW200
no mark:REC/PB mode
CN103 11P WHT
11 V OUT
10 GND (V)
9 V IN
8 GND (V)
7 I
6 CONTROL
5 A IN (L)
4 A IN (R)
3 GND (A)
2 A OUT (L)
1 A OUT (R)
IC201
SELECTOR
AUDIO
IC201 XRU4053B
ON
C+ OFF
YC
DIR
VTR
TV
Q201
BUFFER
Q201
2SC1740
D001 SLR-34MC3
C204 47 6.3V
L201 100μH
C203 47 6.3V
C208 47 6.3V
JW193
R203 1k
R207 47k
R208 47k
C202 47 6.3V
R204 1k
R205 47k
R206 47k
C205 47 6.3V
C209 0.01
R201 2200
R202 2200
Q202
BUFFER
Q202
2SC1740
C206 47 6.3V
L280 220μ
C281 150p
C280 150p
Q203
BUFFER
Q203
2SC1740
C207 47 6.3V
R210 100
JW192
L281 220μ
R209 2200
C283 1000p B
C282 1000p B
D280 MTZJ-6.8
D281 MTZJ-6.8
TO
MA-88 BOARD (1/2)
CN602
CP-53 BOARD (CP MODEL)
CN122 6P WHT
GND (B) 1
B 2
GND (G) 3
G 4
GND (R) 5
R 6
CN121 11P WHT
V OUT 11
GND (V) 10
V IN 9
GND (V) 8
I 7
CONTROL 6
A IN (L) 5
A IN (R) 4
GND (A) 3
A OUT (L) 2
A OUT (R) 1
CNJ120 21P CENELEC BLK
1 A OUT (R)
2 A IN (R)
3 A OUT (L)
4 GND (A)
5 GND (B)
6 A IN (L)
7 B
8 CONTROL
9 GND (G)
10 N.C.
11 G
12 N.C.
13 GND (R)
14 GND (I)
15 R
16 I
17 GND (V)
18 GND (V)
19 V OUT
20 V IN
21 GND (S)
D190 MTZJ-6.8
D191 MTZJ-6.8
R120 68
CANAL PLUS

CV-22 (ON SCREEN DISPLAY, VPS) SCHEMATIC DIAGRAMS

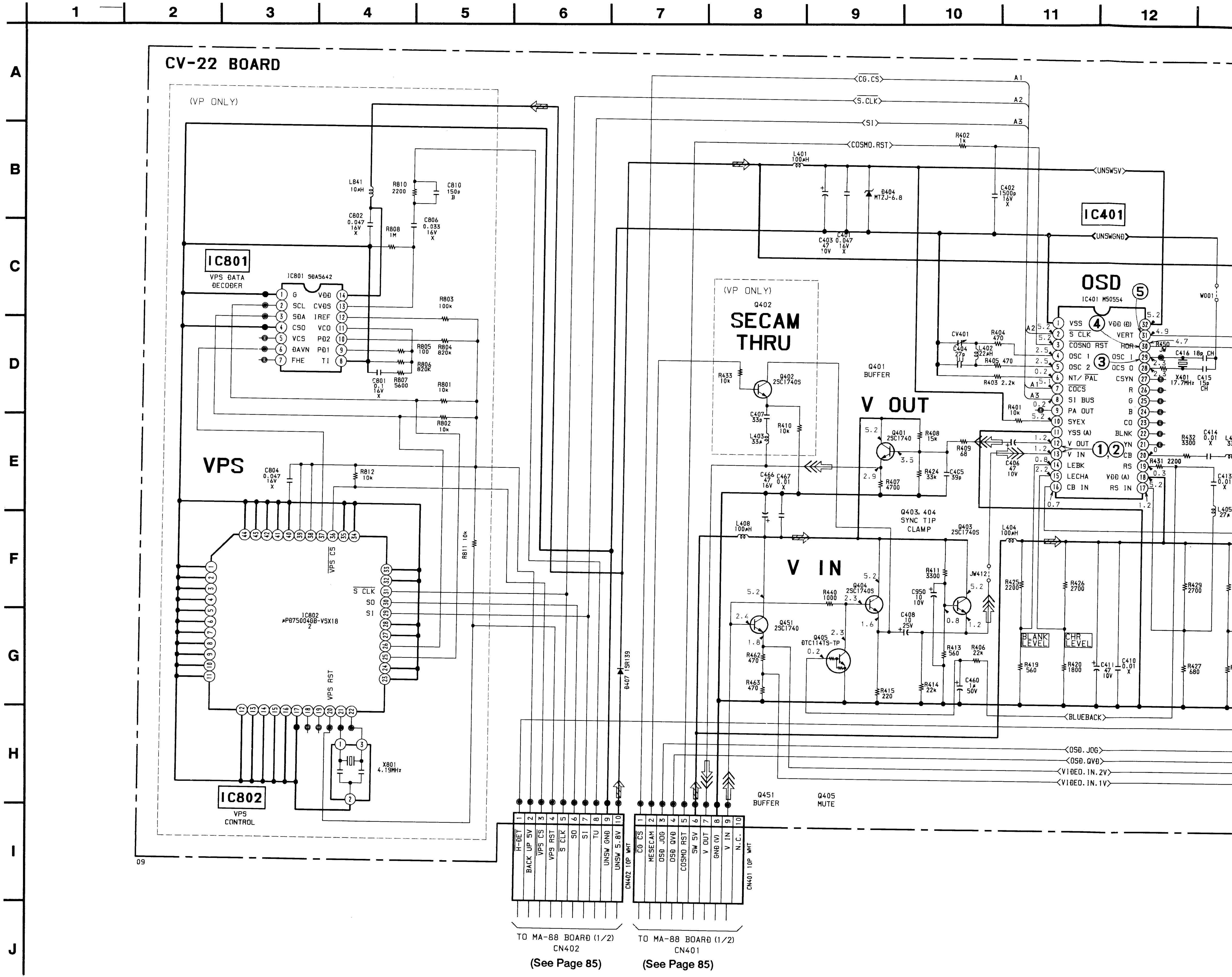
— Ref. No. CV-22 BOARD: 6000 series —

CV-22 BOARD



• **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				
PB			⇒	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A
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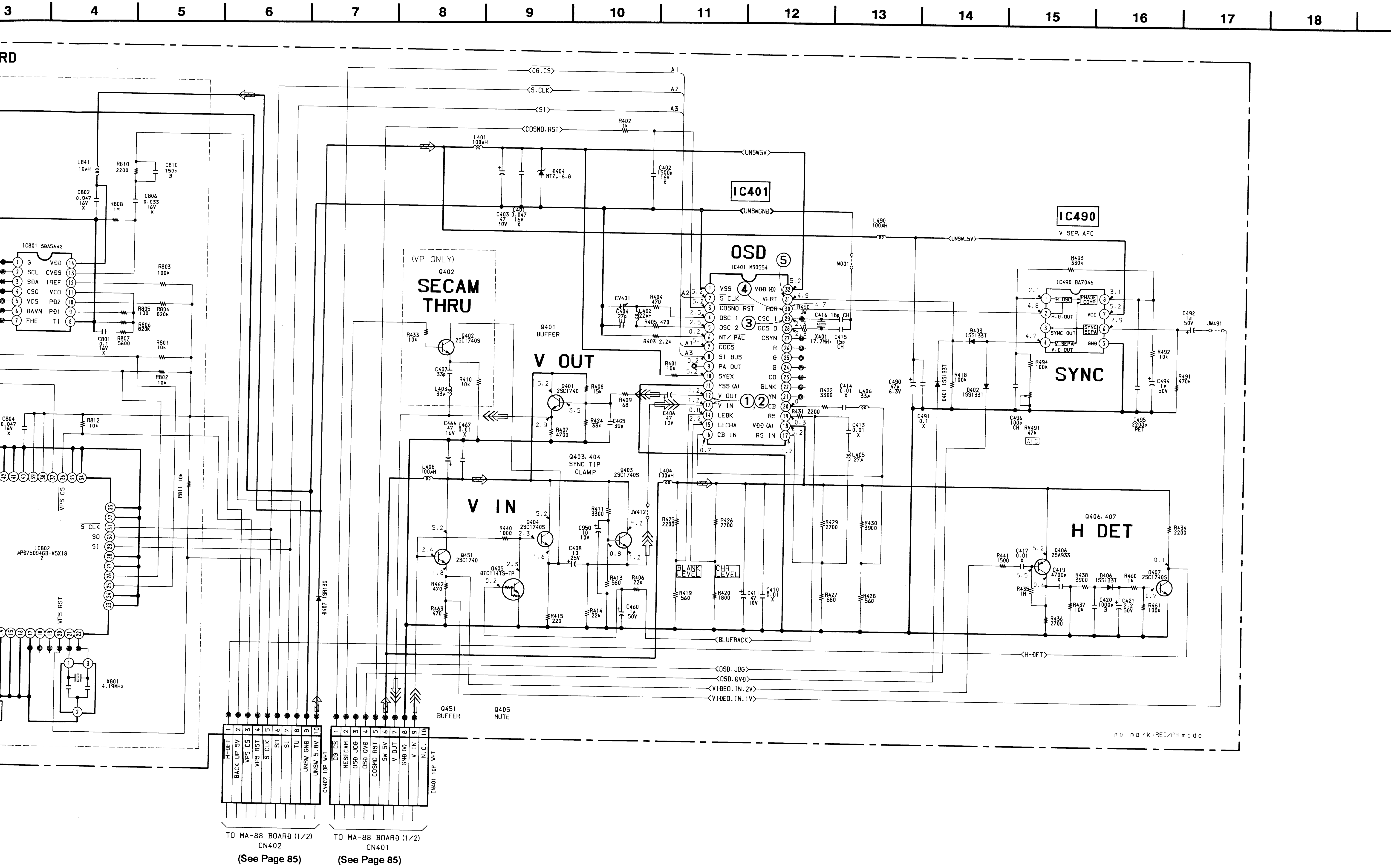
I
J
CV-22 BOARD
(VP ONLY)
IC801
VPS DATA DECODER
IC801 SDA5642
G
SCL
SDA
CSO
VCS
DAVN
FHE
VDD
CVDS
IREF
VCO
PD2
PD1
TI
L841 10μH
R810 2200
C810 150p
C802 0.047 16V
R808 1M
C806 0.033 16V
R803 100k
R805 100
R804 820k
R806 820k
C801 0.1 16V
R807 5600
R801 10k
R802 10k
VPS
C804 0.047 16V
R812 10k
R811 10k
IC802 μPD75004GB-V5X18
VPS CS
S CLK
SO
SI
VPS RST
X801 4.19MHz
IC802
VPS CONTROL
D407 1SR139
09
CG.CS
S.CLK
SI
COSMO.RST
A1
A2
A3
R402 1k
L401 100μH
D404 MTZJ-6.8
C402 1500p 16V
C403 47 10V
C401 0.047 16V
UNSWSV
UNSWGND
IC401
OSD
IC401 M50554
(VP ONLY)
Q402
SECAM THRU
R433 10k
Q402 2SC1740S
C407 33p
L403 33μ
R410 10k
Q401 BUFFER
V OUT
Q401 2SC1740
R408 15k
R409 68
R424 33k
C405 39p
R407 4700
C466 47 16V
C467 0.01
Q403, 404 SYNC TIP CLAMP
Q403 2SC1740S
L408 100μH
V IN
Q404 2SC1740S
R440 1000
Q451 2SC1740
Q405 DTC114TS-TP
R411 3300
C950 10 10V
C408 10 25V
JW412
R413 560
R406 22k
R462 470
R463 470
R415 220
R414 22k
C460 1μ 50V
CV401
C404 27p
L402 22μH
R404 470
R405 470
R403 2.2k
R401 10k
C406 47 10V
VSS
S CLK
COSNO RST
OSC 1
OSC 2
NT/PAL
COCS
SI BUS
PA OUT
SYEX
YSS (A)
V OUT
V IN
LEBK
LECHA
CB IN
VDD (D)
VERT
HOR
OSC I
OCS O
CSYN
R
G
B
CO
BLNK
YN
CB
RS
VDD (A)
RS IN
R450
C416 18p
X401 17.7MHz
C415 15p
W001
R432 3300
C414 0.01
R431 2200
C413 0.01
L405 27μ
L404 100μH
R425 2200
R426 2700
R429 2700
BLANK LEVEL
CHR LEVEL
R419 560
R420 1800
C411 47 10V
C410 0.01
R427 680
BLUEBACK
OSD.JOG
OSD.QVD
VIDEO.IN.2V
VIDEO.IN.1V
Q451 BUFFER
Q405 MUTE
H-DET
BACK UP 5V
VPS CS
VPS RST
S CLK
SO
SI
TU
UNSW GND
UNSW 5.8V
CN402 10P WHT
CG CS
MESECAM
OSD JOG
OSD QVD
COSMO RST
SW 5V
V OUT
GND (V)
V IN
N.C.
CN401 10P WHT
TO MA-88 BOARD (1/2) CN402
(See Page 85)
TO MA-88 BOARD (1/2) CN401
(See Page 85)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14
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16
17
18
RD
IC801 SDA5642
IC802 μPD750040B-VSX18
X801 4.19MHz
(VP ONLY)
Q402
SECAM THRU
Q401 BUFFER
V OUT
V IN
Q403, 404 SYNC TIP CLAMP
IC401
OSD
IC401 M50554
IC490
V SEP, AFC
IC490 BA7046
SYNC
Q406, 407
H DET
BLANK LEVEL
CHR LEVEL
Q451 BUFFER
Q405 MUTE
CG.CS
S.CLK
SI
COSMO.RST
UNSW5V
UNSWGND
UNSW_5V
BLUEBACK
H-DET
OSD.JOG
OSD.QVD
VIDEO.IN.2V
VIDEO.IN.1V
X401 17.7MHz
H-DET
BACK UP 5V
VPS RST
VPS CS
S CLK
SD
SI
TU
UNSW GND
UNSW 5.8V
CN402 10P WHT
CG CS
MESECAM
OSD JOG
OSD QVD
COSMO RST
SW 5V
V OUT
GND (V)
V IN
N.C.
CN401 10P WHT
TO MA-88 BOARD (1/2) CN402
(See Page 85)
TO MA-88 BOARD (1/2) CN401
(See Page 85)
no mark:REC/PB mode

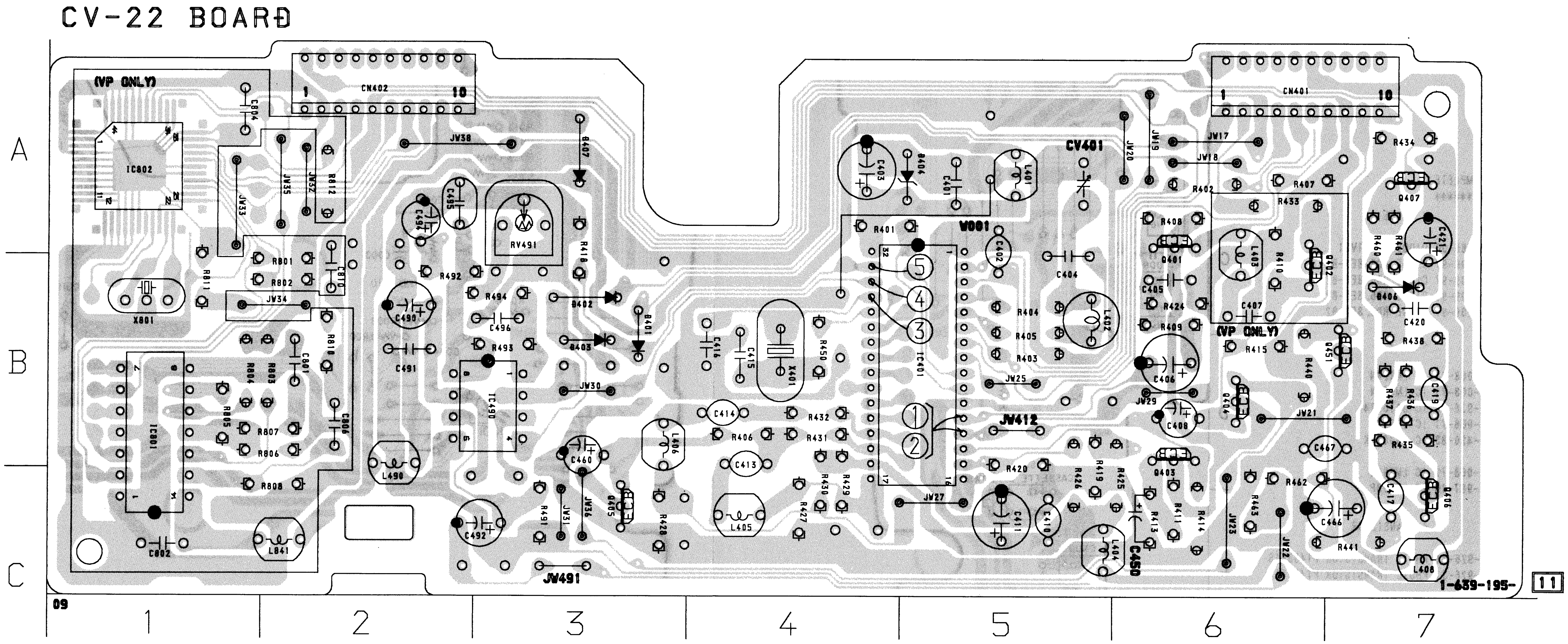
O SD, VPS **O SD, VPS**

CV-22 (ON SCREEN DISPLAY, VPS) PRINTED WIRING BOARDS

— Ref. No. CV-22 BOARD: 6000 series —

CV-22 BOARD

D401	B-3
D402	B-3
D403	B-3
D404	A-5
D406	B-7
D407	A-3
IC401	B-5
IC490	B-3
IC801	B-1
IC802	A-1
Q401	B-6
Q402	B-6
Q403	B-6
Q404	B-6
Q405	C-3
Q406	C-7
Q407	A-7
Q451	B-7


CV-22 BOARD
A
B
C
1
2
3
4
5
6
7
09
(VP ONLY)
IC802
CN402
CN401
JW38
D407
CV401
V001
IC401
IC490
IC801
RV491
X801
X401
L490
L841
L405
L406
L401
L402
L403
L404
L408
D401
D402
D403
D404
D406
Q401
Q402
Q403
Q404
Q405
Q406
Q407
Q451
JW412
JW491
C450
1-639-195-
11

CV-22 BOARD, COMPLETE (AEP/CP MODEL)
****
CV-22 BOARD, COMPLETE (VP MODEL)
****
CV-22 BOARD; COMPLETE (UB MODEL)
****

< DIODE >

D401	8-719-911-19	DIODE	1SS119
D402	8-719-911-19	DIODE	1SS119
D403	8-719-911-19	DIODE	1SS119
D404	8-719-109-97	DIODE	RD6.8ES-B2
D406	8-719-911-19	DIODE	1SS119
D407	8-719-974-59	DIODE	1SR139-100

< IC >

IC401	8-759-634-22	IC	M50554-182SP
IC490	8-759-514-54	IC	BA7046
IC801	8-759-030-60	IC	SDA5642 (VP MODEL)
IC802	8-759-147-30	IC	uPD75004GB-VSX182 (VP MODEL)

< TRANSISTOR >

Q401	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q402	8-729-119-78	TRANSISTOR	2SC2785-HFE (VP MODEL)
Q403	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q404	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q405	8-729-904-39	TRANSISTOR	DTC114TS
Q406	8-729-920-68	TRANSISTOR	2SA933S-QRT
Q407	8-729-119-78	TRANSISTOR	2SC2785-HFE
Q451	8-729-119-78	TRANSISTOR	2SC2785-HFE

MD-40 (MECHANISM DRIVE) PRINTED WIRING BOARDS

— Ref. No. MD-40 BOARD: 7000 series —

MD-40 BOARD

D001	D-5
D004	F-6
D005	F-5
IC002	A-5
IC004	C-8
IC005	B-8
Q001	C-1
Q002	C-9

MD-40 BOARD, COMPLETE
****

< DIODE >

D001	8-719-985-00	DIODE GL451VS1
D004	8-719-109-97	DIODE RD6.8ES-B2
D004	8-719-109-97	DIODE RD6.8ES-B2
D005	8-719-109-97	DIODE RD6.8ES-B2
D005	8-719-109-97	DIODE RD6.8ES-B2

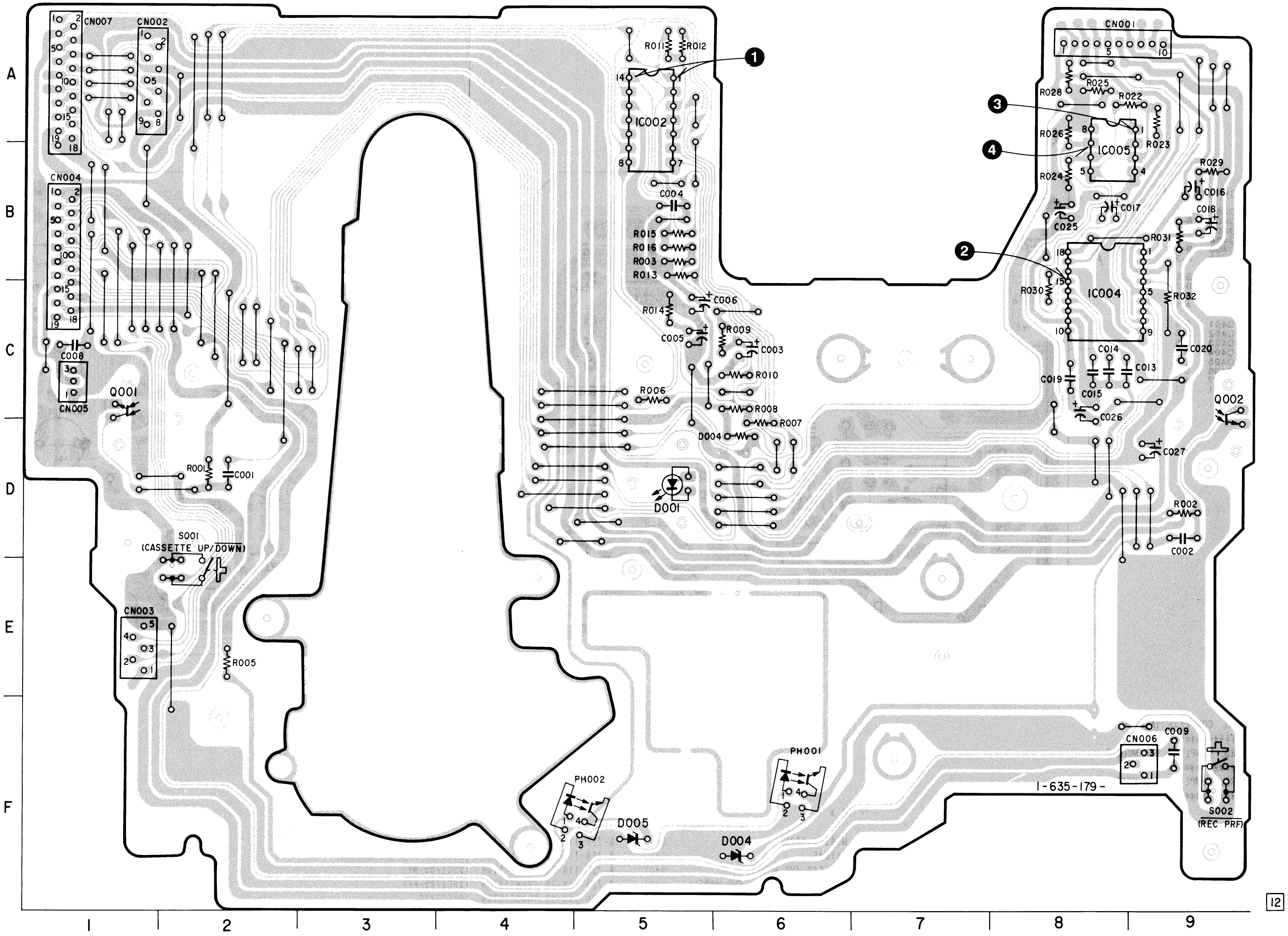
< IC >

IC002	8-759-008-71	IC LM324N
IC002	8-759-008-71	IC LM324N
IC002	8-759-938-12	IC BA10324
IC002	8-759-008-71	IC LM324N
IC004	8-759-420-83	IC AN3814K
IC005	8-759-008-72	IC LM393N
IC005	8-759-987-16	IC LM393P

< TRANSISTOR >

Q001	8-729-926-31	PHOTO TRANSISTOR PT483F1S
Q002	8-729-926-31	PHOTO TRANSISTOR PT483F1S

MD-40 BOARD


A
B
C
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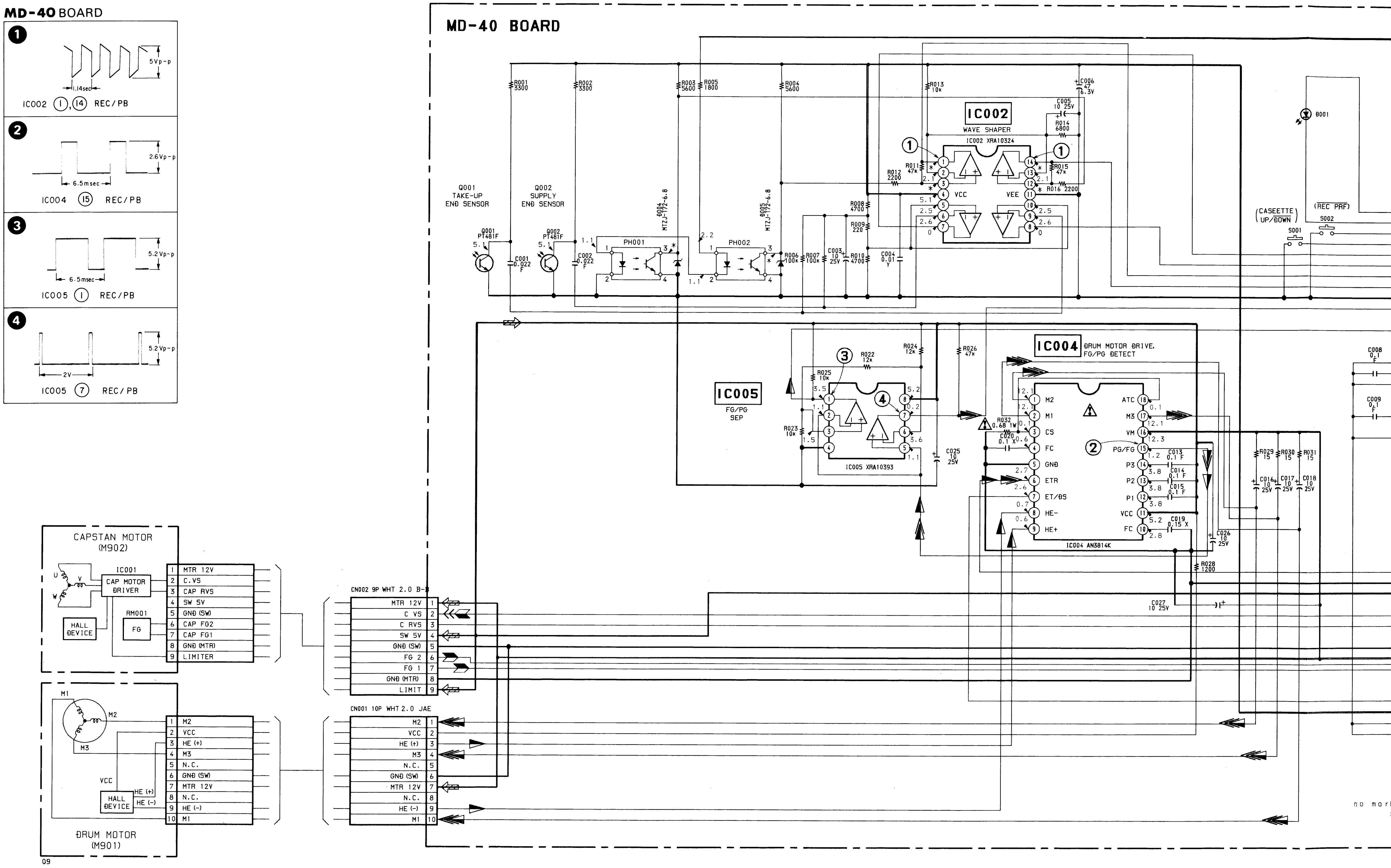
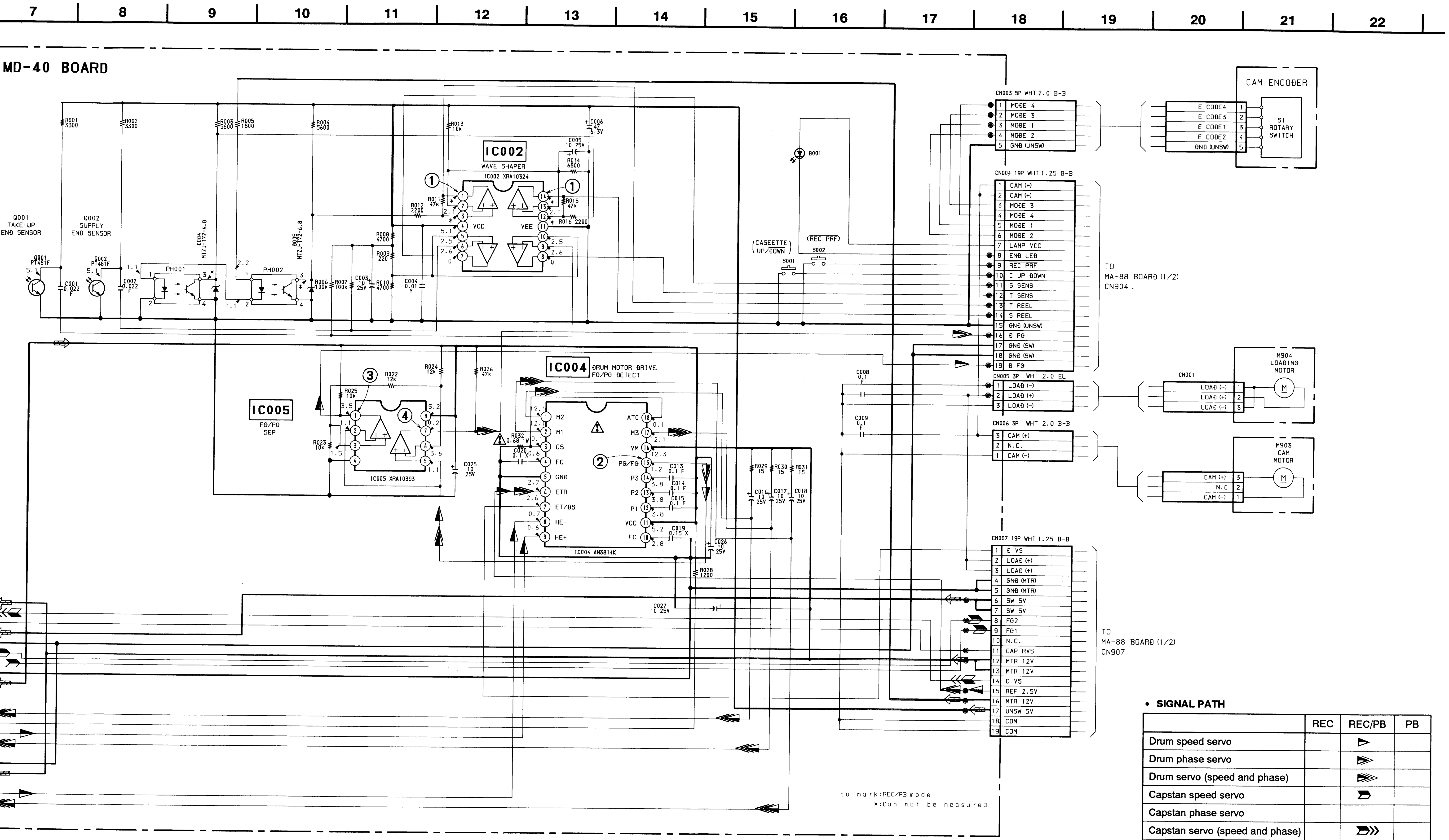
CN007
CN002
CN004
CN005
CN003
CN001
CN006
IC002
IC004
IC005
Q001
Q002
D001
D004
D005
PH001
PH002
S001
(CASSETTE UP/DOWN)
S002
(REC PRF)
C001
C002
C003
C004
C005
C006
C008
C009
C013
C014
C015
C016
C017
C018
C019
C020
C025
C026
C027
R001
R002
R003
R005
R006
R007
R008
R009
R010
R011
R012
R013
R014
R015
R016
R022
R023
R024
R025
R026
R028
R029
R030
R031
R032
❶
❷
❸
❹
1-635-179-
12

MD-40 (MECHANISM DRIVE) SCHEMATIC DIAGRAMS

— Ref. No. MD-40 BOARD: 7000 series —


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
MD-40 BOARD
① 5Vp-p 1.14sec IC002 ①,⑭ REC/PB
② 2.6Vp-p 6.5msec IC004 ⑮ REC/PB
③ 5.2Vp-p 6.5msec IC005 ① REC/PB
④ 5.2Vp-p 2V IC005 ⑦ REC/PB
MD-40 BOARD
IC002 WAVE SHAPER
IC002 XRA10324
VCC
VEE
IC005 FG/PG SEP
IC005 XRA10393
IC004 DRUM MOTOR DRIVE, FG/PG DETECT
IC004 AN3814K
M2 M1 CS FC GND ETR ET/DS HE- HE+
ATC M3 VM PG/FG P3 P2 P1 VCC FC
Q001 TAKE-UP END SENSOR
Q002 SUPPLY END SENSOR
Q001 PT481F
Q002 PT481F
PH001
PH002
D004 MTZJ-T72-6.8
D005 MTZJ-T72-6.8
R001 3300
R002 3300
R003 5600
R005 1800
R004 5600
R013 10k
C006 47 6.3V
C005 10 25V
R014 6800
R011 47k
R012 2200
R015 47k
R016 2200
R008 4700
R009 220
R006 100k
R007 100k
C003 10 25V
R010 4700
C004 0.01
C001 0.022
C002 0.022
R024 12k
R026 47k
R022 12k
R025 10k
R023 10k
C025 10 25V
R032 0.68 1W
C020 0.1
C013 0.1
C014 0.1
C015 0.1
C019 0.15
C026 10 25V
R028 1200
C027 10 25V
R029 15
R030 15
R031 15
C016 10 25V
C017 10 25V
C018 10 25V
C008 0.1
C009 0.1
D001
(CASEETTE UP/DOWN)
S001
(REC PRF)
S002
CAPSTAN MOTOR (M902)
IC001 CAP MOTOR DRIVER
RM001 FG
HALL DEVICE
U V W
1 MTR 12V
2 C.VS
3 CAP RVS
4 SW 5V
5 GND (SW)
6 CAP FG2
7 CAP FG1
8 GND (MTR)
9 LIMITER
CN002 9P WHT 2.0 B-B
MTR 12V 1
C VS 2
C RVS 3
SW 5V 4
GND (SW) 5
FG 2 6
FG 1 7
GND (MTR) 8
LIMIT 9
DRUM MOTOR (M901)
M1 M2 M3
VCC
HALL DEVICE
HE (+) HE (-)
1 M2
2 VCC
3 HE (+)
4 M3
5 N.C.
6 GND (SW)
7 MTR 12V
8 N.C.
9 HE (-)
10 M1
CN001 10P WHT 2.0 JAE
M2 1
VCC 2
HE (+) 3
M3 4
N.C. 5
GND (SW) 6
MTR 12V 7
N.C. 8
HE (-) 9
M1 10
09
no mar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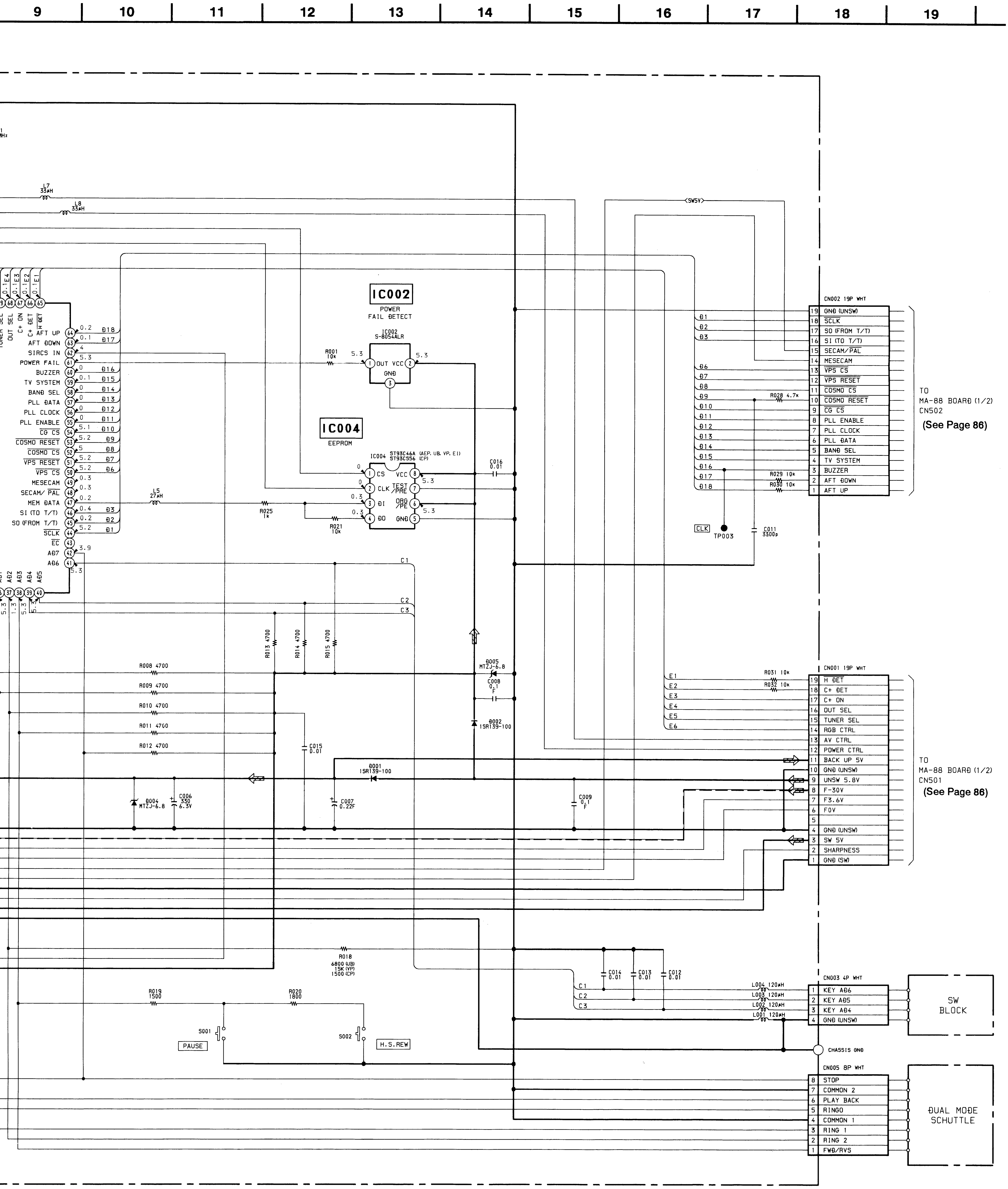
21
22
MD-40 BOARD
Q001 TAKE-UP END SENSOR
Q002 SUPPLY END SENSOR
Q001 PT481F
Q002 PT481F
R001 3300
R002 3300
R003 5600
R005 1800
R004 5600
C001 0.022 F
C002 0.022 F
PH001
PH002
D004 MTZJ-T72-6.8
D005 MTZJ-T72-6.8
R006 100k
R007 100k
C003 10 25V
R010 4700
R008 4700
R009 220
C004 0.01 Y
R013 10k
C006 47 6.3V
C005 10 25V
R014 6800
IC002
WAVE SHAPER
IC002 XRA10324
R011 47k
R012 2200
R015 47k
R016 2200
VCC
VEE
B001
CASEETTE UP/DOWN
REC PRF
S001
S002
IC005
FG/PG SEP
IC005 XRA10393
R022 12k
R024 12k
R025 10k
R026 47k
R023 10k
C025 10 25V
IC004
DRUM MOTOR DRIVE. FG/PG DETECT
IC004 AN3814K
R032 0.68 1W
C020 0.1
M2
M1
CS
FC
GND
ETR
ET/ØS
HE-
HE+
ATC
M3
VM
PG/FG
P3
P2
P1
VCC
FC
C013 0.1 F
C014 0.1 F
C015 0.1 F
C019 0.15
C026 10 25V
R028 1200
C027 10 25V
R029 15
R030 15
R031 15
C016 10 25V
C017 10 25V
C018 10 25V
C008 0.1 F
C009 0.1 F
CN003 5P WHT 2.0 B-B
1 MODE 4
2 MODE 3
3 MODE 1
4 MODE 2
5 GND (UNSW)
CAM ENCODER
E CODE4
E CODE3
E CODE1
E CODE2
GND (UNSW)
S1 ROTARY SWITCH
CN004 19P WHT 1.25 B-B
1 CAM (+)
2 CAM (+)
3 MODE 3
4 MODE 4
5 MODE 1
6 MODE 2
7 LAMP VCC
8 END LED
9 REC PRF
10 C UP DOWN
11 S SENS
12 T SENS
13 T REEL
14 S REEL
15 GND (UNSW)
16 D PG
17 GND (SW)
18 GND (SW)
19 D FG
TO MA-88 BOARD (1/2) CN904 .
CN005 3P WHT 2.0 EL
1 LOAD (-)
2 LOAD (+)
3 LOAD (-)
CN001
M904 LOADING MOTOR
CN006 3P WHT 2.0 B-B
3 CAM (+)
2 N.C.
1 CAM (-)
M903 CAM MOTOR
CAM (+)
N.C
CAM (-)
CN007 19P WHT 1.25 B-B
1 D VS
2 LOAD (+)
3 LOAD (+)
4 GND (MTR)
5 GND (MTR)
6 SW 5V
7 SW 5V
8 FG2
9 FG1
10 N.C.
11 CAP RVS
12 MTR 12V
13 MTR 12V
14 C VS
15 REF 2.5V
16 MTR 12V
17 UNSW 5V
18 COM
19 COM
TO MA-88 BOARD (1/2) CN907

no mark:REC/PB mode
*:Can not be measured

- **SIGNAL PATH**

	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷▷	
Drum servo (speed and phase)		▷▷▷	
Capstan speed servo		⊳	
Capstan phase servo			
Capstan servo (speed and phase)		⊳»	
Ref. signal			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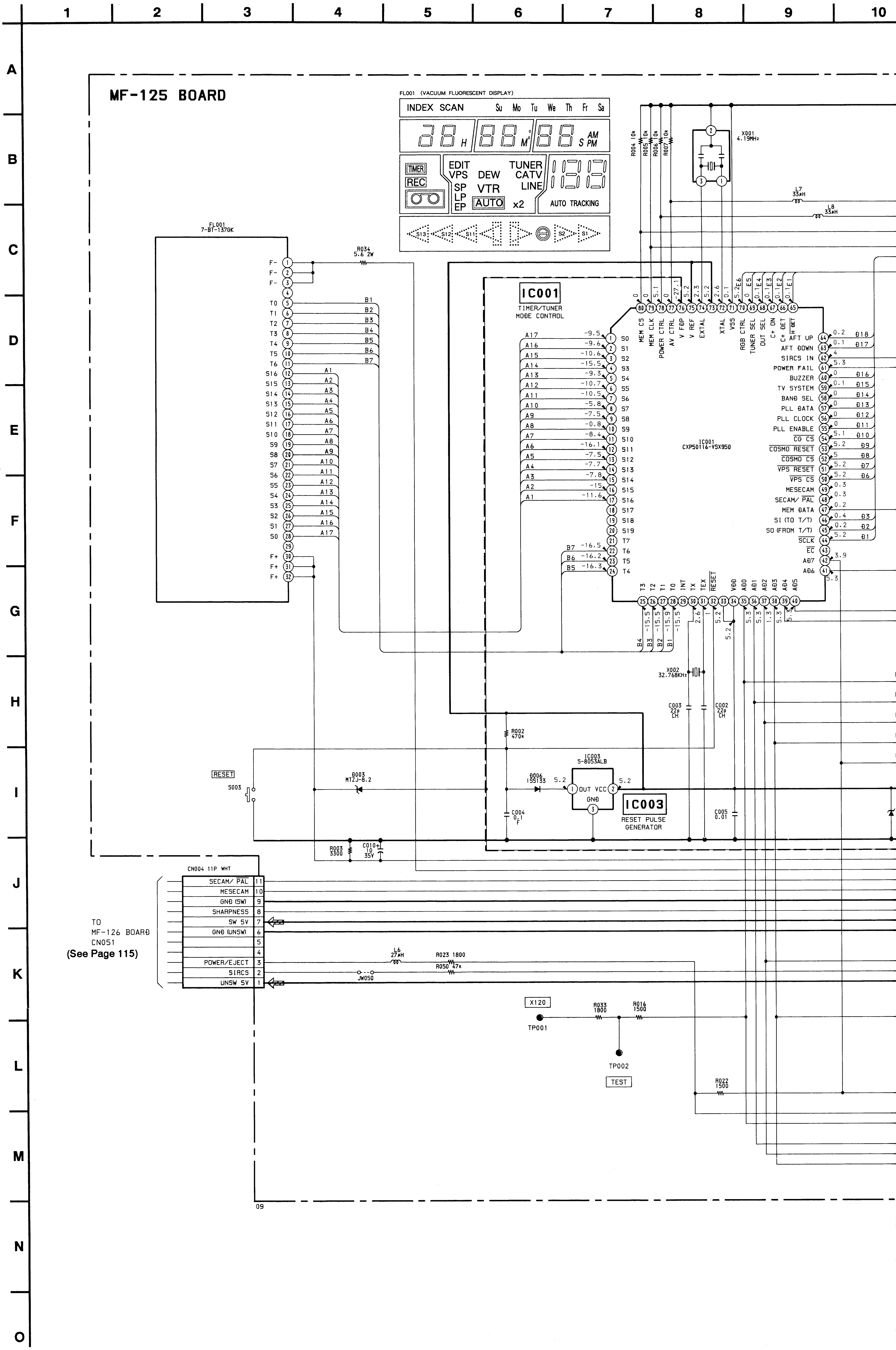
19
IC002
POWER FAIL DETECT
IC002 S-8054ALR
OUT VCC GND
IC004
EEPROM
IC004 ST93C46A (AEP, UB, VP, EI) ST93C556 (CP)
CS VCC CLK TEST/PRE DI ORG/PE DO GND
L7 33μH
L8 33μH
L5 27μH
<SW5V>
C+ AFT UP
AFT DOWN
SIRCS IN
POWER FAIL
BUZZER
TV SYSTEM
BAND SEL
PLL DATA
PLL CLOCK
PLL ENABLE
CG CS
COSMO RESET
COSMO CS
VPS RESET
VPS CS
MESECAM
SECAM/PAL
MEM DATA
SI (TO T/T)
SO (FROM T/T)
SCLK
EC
AD7
AD6
TUNER SEL
OUT SEL
C+ ON
C+ DET
H DET
AD1 AD2 AD3 AD4 AD5
R001 10k
R021 10k
R025 1k
C016 0.01
R028 4.7k
R029 10k
R030 10k
CLK
TP003
C011 3300p
R013 4700
R014 4700
R015 4700
R008 4700
R009 4700
R010 4700
R011 4700
R012 4700
D005 MTZJ-6.8
C008 0.1 F
D002 1SR139-100
D001 1SR139-100
C015 0.01
D004 MTZJ-6.8
C006 330 6.3V
C007 0.22F
C009 0.1 F
R031 10k
R032 10k
CN002 19P WHT
19 GND (UNSW)
18 SCLK
17 SO (FROM T/T)
16 SI (TO T/T)
15 SECAM/PAL
14 MESECAM
13 VPS CS
12 VPS RESET
11 COSMO CS
10 COSMO RESET
9 CG CS
8 PLL ENABLE
7 PLL CLOCK
6 PLL DATA
5 BAND SEL
4 TV SYSTEM
3 BUZZER
2 AFT DOWN
1 AFT UP
TO MA-88 BOARD (1/2) CN502
(See Page 86)
CN001 19P WHT
19 H DET
18 C+ DET
17 C+ ON
16 OUT SEL
15 TUNER SEL
14 RGB CTRL
13 AV CTRL
12 POWER CTRL
11 BACK UP 5V
10 GND (UNSW)
9 UNSW 5.8V
8 F-30V
7 F3.6V
6 F0V
5
4 GND (UNSW)
3 SW 5V
2 SHARPNESS
1 GND (SW)
TO MA-88 BOARD (1/2) CN501
(See Page 86)
R018 6800 (UB) 15K (VP) 1500 (CP)
C014 0.01
C013 0.01
C012 0.01
R019 1500
R020 1800
S001
PAUSE
S002
H.S.REW
L004 120μH
L003 120μH
L002 120μH
L001 120μH
CN003 4P WHT
1 KEY AD6
2 KEY AD5
3 KEY AD4
4 GND (UNSW)
SW BLOCK
CHASSIS GND
CN005 8P WHT
8 STOP
7 COMMON 2
6 PLAY BACK
5 RINGO
4 COMMON 1
3 RING 1
2 RING 2
1 FWD/RVS
DUAL MODE SCHUTTLE

MF-125 (TUNER, TIMER, MODE CONTROL) SCHEMATIC DIAGRAMS

— Ref. No. MF-125 BOARD: 7200 series —



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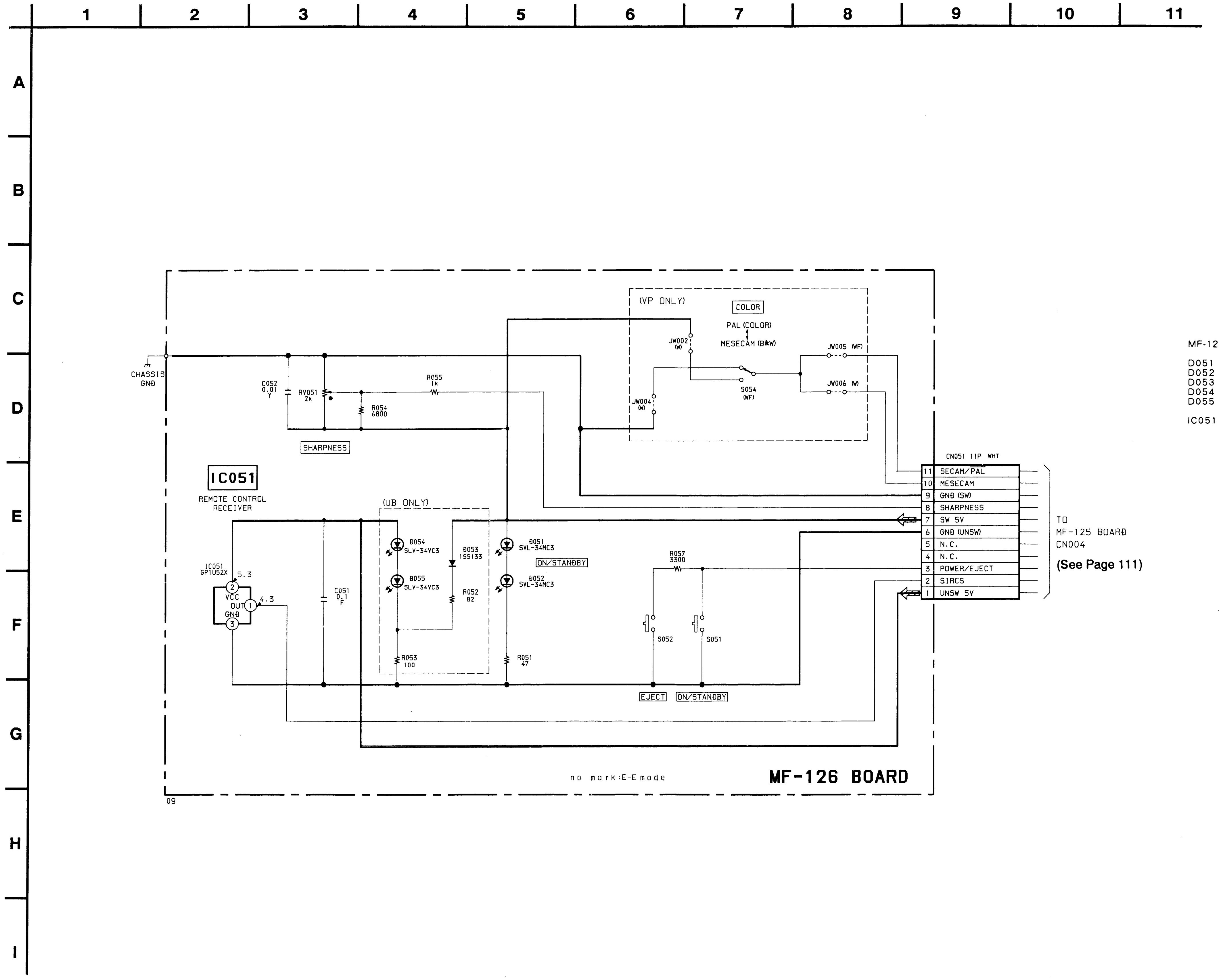
G
H
I
J
K
L
M
N
O
MF-125 BOARD
FL001 (VACUUM FLUORESCENT DISPLAY)
INDEX SCAN
Su Mo Tu We Th Fr Sa
H
M
AM
S PM
TIMER
REC
EDIT
VPS
DEW
SP
LP
EP
VTR
AUTO
x2
TUNER
CATV
LINE
AUTO TRACKING
S13
S12
S11
S2
S1
FL001
7-BT-137GK
F-
T0
T1
T2
T3
T4
T5
T6
S16
S15
S14
S13
S12
S11
S10
S9
S8
S7
S6
S5
S4
S3
S2
S1
S0
F+
B1
B2
B3
B4
B5
B6
B7
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
R034
5.6 2W
IC001
TIMER/TUNER
MODE CONTROL
IC001
CXP50116-YSX950
MEM CS
MEM CLK
POWER CTRL
AV CTRL
V FDP
V REF
EXTAL
XTAL
VSS
RGB CTRL
TUNER SEL
OUT SEL
C+ ON
C+ DET
H DET
AFT UP
AFT DOWN
SIRCS IN
POWER FAIL
BUZZER
TV SYSTEM
BAND SEL
PLL DATA
PLL CLOCK
PLL ENABLE
CG CS
COSMO RESET
COSMO CS
VPS RESET
VPS CS
MESECAM
SECAM/ PAL
MEM DATA
SI (TO T/T)
SO (FROM T/T)
SCLK
EC
AD7
AD6
T3
T2
T1
T0
INT
TX
TEX
RESET
VDD
AD0
AD1
AD2
AD3
AD4
AD5
D18
D17
D16
D15
D14
D13
D12
D11
D10
D9
D8
D7
D6
D3
D2
D1
-9.5
-9.6
-10.6
-15.5
-9.3
-10.7
-10.5
-5.8
-7.5
-0.8
-8.4
-16.1
-7.5
-7.7
-7.8
-15
-11.6
-16.5
-16.2
-16.3
R004 10k
R005 10k
R006 10k
R007 10k
X001
4.19MHz
L7
33μH
L8
33μH
X002
32.768KHz
C003
22p
CH
C002
22p
CH
R002
470k
IC003
S-8053ALB
OUT
VCC
GND
IC003
RESET PULSE
GENERATOR
D006
1SS133
D003
MTZJ-8.2
RESET
S003
C004
0.1
F
C005
0.01
R003
3300
C010
10
35V
CN004 11P WHT
SECAM/ PAL
MESECAM
GND (SW)
SHARPNESS
SW 5V
GND (UNSW)
POWER/EJECT
SIRCS
UNSW 5V
TO
MF-126 BOARD
CN051
(See Page 115)
L6
27μH
R023 1800
R050 47k
JW050
X120
TP001
R033
1800
R016
1500
TP002
TEST
R022
1500
09

MF-126 (FUNCTION SW, REMOTE CONTROL RECEIVER) SCHEMATIC DIAGRAMS

— Ref. No. MF-126 BOARD: 7400 series —


1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
(VP ONLY)
COLOR
PAL (COLOR)
MESECAM (B&W)
JW002 (W)
JW004 (W)
JW005 (WF)
JW006 (W)
S054 (WF)
CHASSIS GND
C052 0.01 Y
RV051 2k
R055 1k
R054 6800
SHARPNESS
IC051
REMOTE CONTROL RECEIVER
(UB ONLY)
IC051 GP1U52X
5.3
4.3
VCC
OUT
GND
C051 0.1 F
D054 SLV-34VC3
D055 SLV-34VC3
D053 1SS133
R052 82
R053 100
D051 SVL-34MC3
D052 SVL-34MC3
ON/STANDBY
R051 47
R057 3300
S052
S051
EJECT
ON/STANDBY
CN051 11P WHT
11 SECAM/PAL
10 MESECAM
9 GND (SW)
8 SHARPNESS
7 SW 5V
6 GND (UNSW)
5 N.C.
4 N.C.
3 POWER/EJECT
2 SIRCS
1 UNSW 5V
TO MF-125 BOARD CN004
(See Page 111)
no mark:E-E mode
MF-126 BOARD
09

MF-126 (FUNCTION SW, REMOTE CONTROL RECEIVER) PRINTED WIRIN

— Ref. No. MF-126 BOARD: 7400 series —

MF-126 BOARD, COMPLETE (VP MODEL)
****

< DIODE >

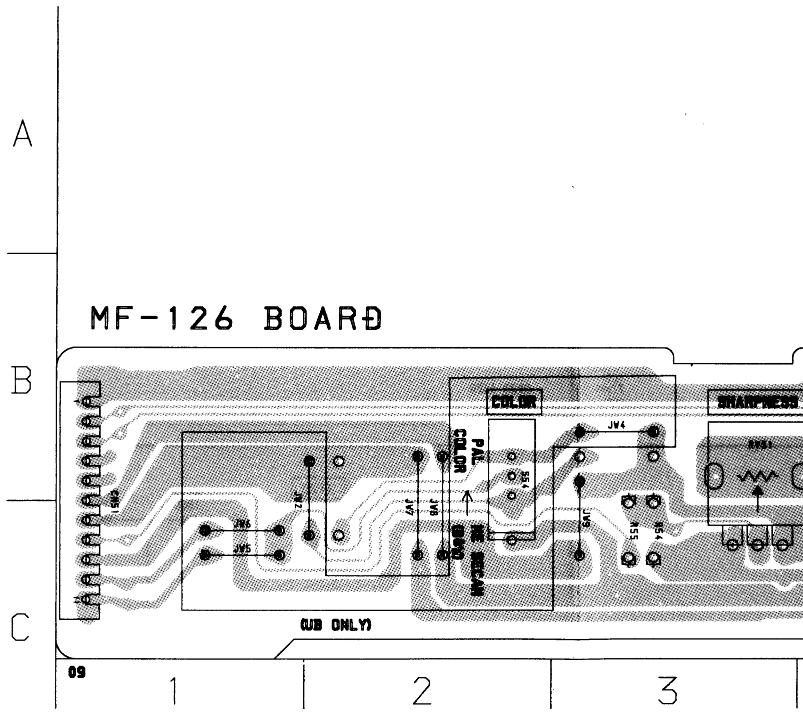
D051	8-719-940-82	DIODE SLR-34MC3
D052	8-719-940-82	DIODE SLR-34MC3
D053	8-719-911-19	DIODE 1SS133T (UB MODEL)
D054	8-719-940-99	DIODE SLV-34VC3 (UB MODEL)
D055	8-719-940-99	DIODE SLV-34VC3 (UB MODEL)

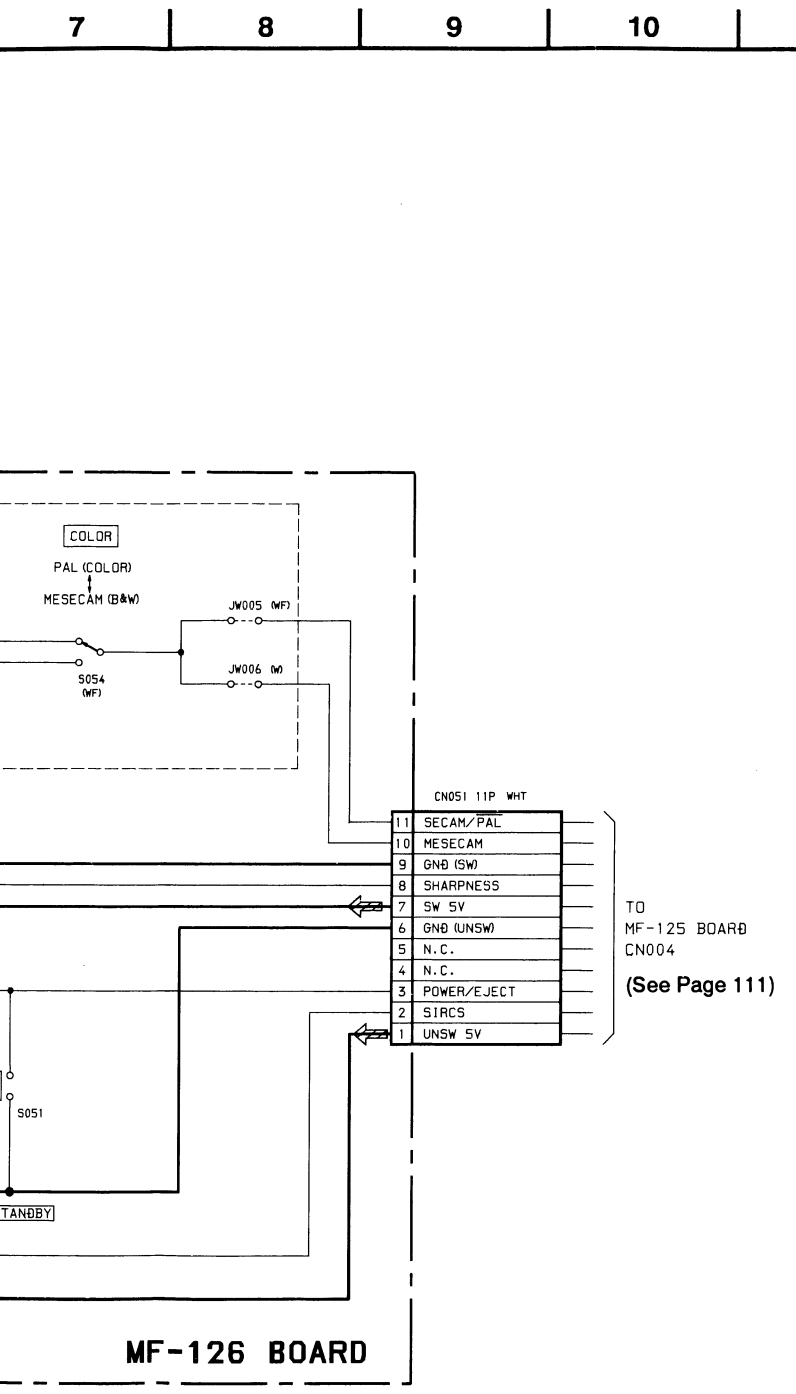
< IC >

IC051	1-466-131-21	IC GP1U52X

MF-126 BOARD

D051	A-8
D052	A-8
D053	C-5
D054	A-7
D055	A-8
IC051	C-8


A
B
C
MF-126 BOARD
COLOR
SHARPNESS
PAL COLOR
ME SECAM
(UB ONLY)
JW4
JW5
JW6
09
1
2
3


7
8
9
10
11
COLOR
PAL (COLOR)
MESECAM (B&W)
JW005 (WF)
JW006 (W)
S054 (WF)
CN051 11P WHT
11 SECAM/PAL
10 MESECAM
9 GND (SW)
8 SHARPNESS
7 SW 5V
6 GND (UNSW)
5 N.C.
4 N.C.
3 POWER/EJECT
2 SIRCS
1 UNSW 5V
TO MF-125 BOARD CN004
(See Page 111)
S051
TANDBY
MF-126 BOARD

MF-126 (FUNCTION SW, REMOTE CONTROL RECEIVER) PRINTED WIRING BOARDS

— Ref. No. MF-126 BOARD: 7400 series —

MF-126 BOARD, COMPLETE (VP MODEL)
****

< DIODE >

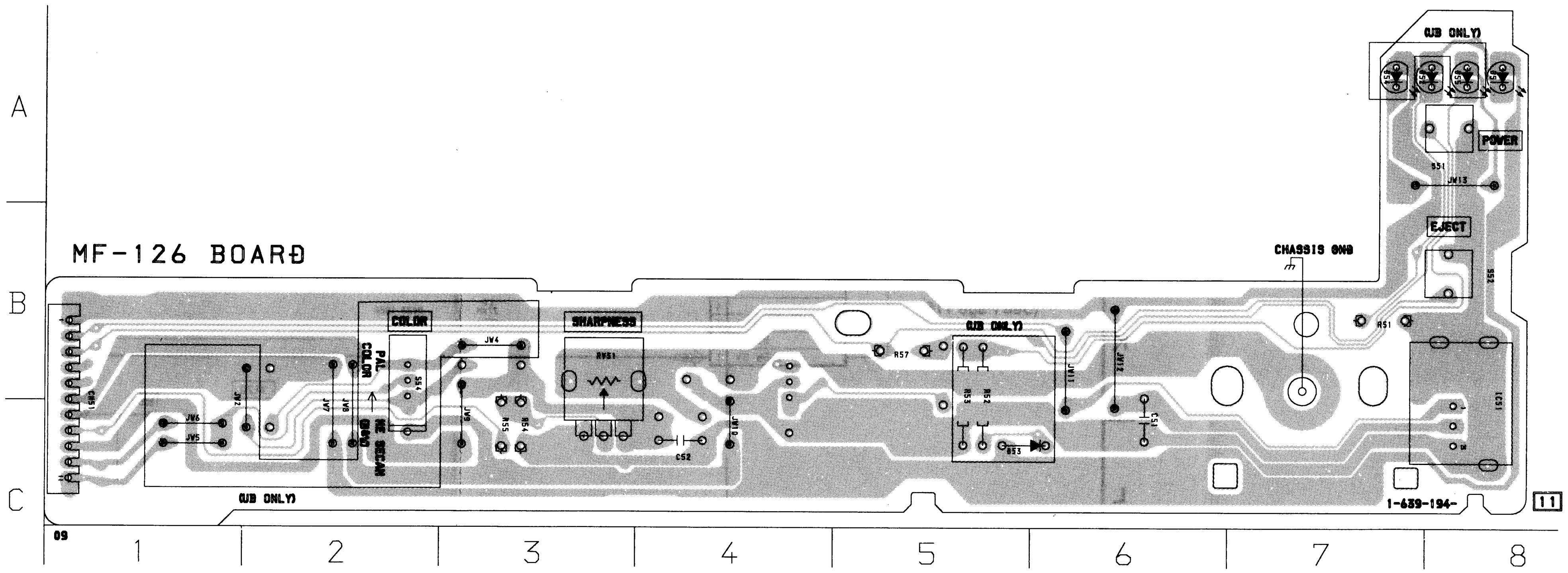
D051	8-719-940-82	DIODE SLR-34MC3
D052	8-719-940-82	DIODE SLR-34MC3
D053	8-719-911-19	DIODE 1SS133T (UB MODEL)
D054	8-719-940-99	DIODE SLV-34VC3 (UB MODEL)
D055	8-719-940-99	DIODE SLV-34VC3 (UB MODEL)

< IC >

IC051	1-466-131-21	IC GP1U52X

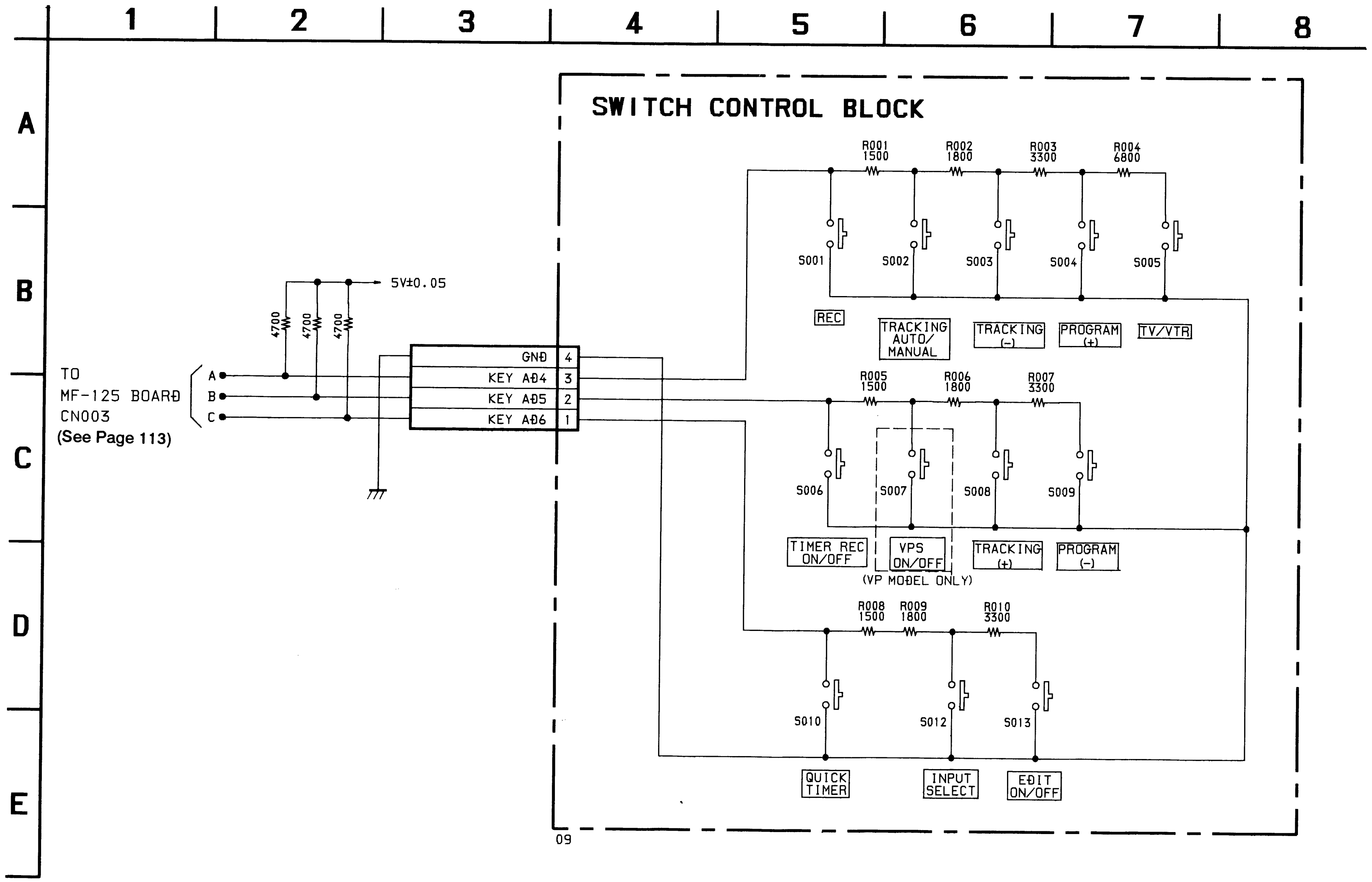
MF-126 BOARD

D051	A-8
D052	A-8
D053	C-5
D054	A-7
D055	A-8
IC051	C-8


A
B
C
MF-126 BOARD
(UB ONLY)
POWER
S51
JW13
EJECT
S52
CHASSIS GND
R51
IC51
COLOR
PAL
COLOR
ME SECAM
S54
SHARPNESS
RV51
JW4
C52
C51
R53
R52
R57
D53
JW11
JW12
(UB ONLY)
(UB ONLY)
1-639-194-
11
09
1
2
3
4
5
6
7
8

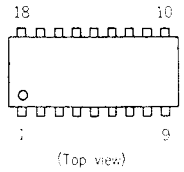
SWITCH CONTROL BLOCK

Note: Switch control block is replaced as a block.

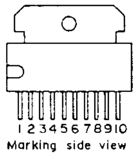

1
2
3
4
5
6
7
8
A
B
C
D
E
SWITCH CONTROL BLOCK
R001 1500
R002 1800
R003 3300
R004 6800
S001
S002
S003
S004
S005
REC
TRACKING AUTO/ MANUAL
TRACKING (-)
PROGRAM (+)
TV/VTR
5V±0.05
4700
4700
4700
TO MF-125 BOARD CN003
(See Page 113)
A
B
C
GND 4
KEY AD4 3
KEY AD5 2
KEY AD6 1
R005 1500
R006 1800
R007 3300
S006
S007
S008
S009
TIMER REC ON/OFF
VPS ON/OFF
(VP MODEL ONLY)
TRACKING (+)
PROGRAM (-)
R008 1500
R009 1800
R010 3300
S010
S012
S013
QUICK TIMER
INPUT SELECT
EDIT ON/OFF
09

4-3. SEMICONDUCTORS

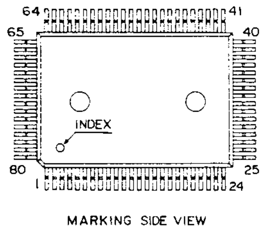
AN3814K


18
10
1
9
(Top view)

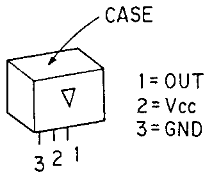
BA6238A


1 2 3 4 5 6 7 8 9 10
Marking side view

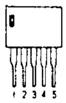
CXP50116-225Q


64
41
65
40
INDEX
80
25
1
24
MARKING SIDE VIEW

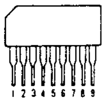
GP1U52X


CASE
1=OUT
2=Vcc
3=GND
3 2 1

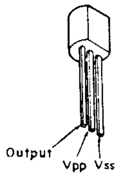
LA2713



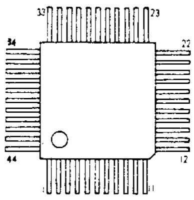
LM2903S



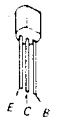
S-8053ALB
S-8054ALR


Output
Vpp
Vss

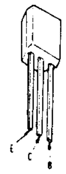
μPD75004GB


33
23
34
22
44
12

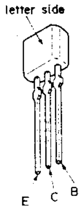
2SA933S-QR



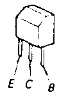
2SC1740S
DTC114ES
DTC144ES



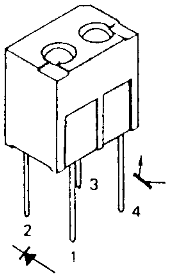
2SC2785-HFE
DTA143XS
DTC114TS


letter side
E
C
B

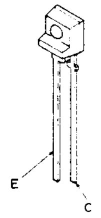
2SD1312-K



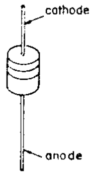
PS6002



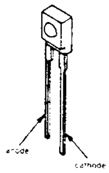
PT483F1S



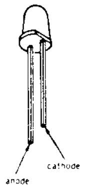
1SS119
1SS133
1SR139-100
RD5.1ES-B2
RD6.8ES-B2
RD8.2ES-B2
RD33ES-B2


cathode
anode

GL451V


anode
cathode

SLR-34MC3
SLV-34VC3


cathode
anode

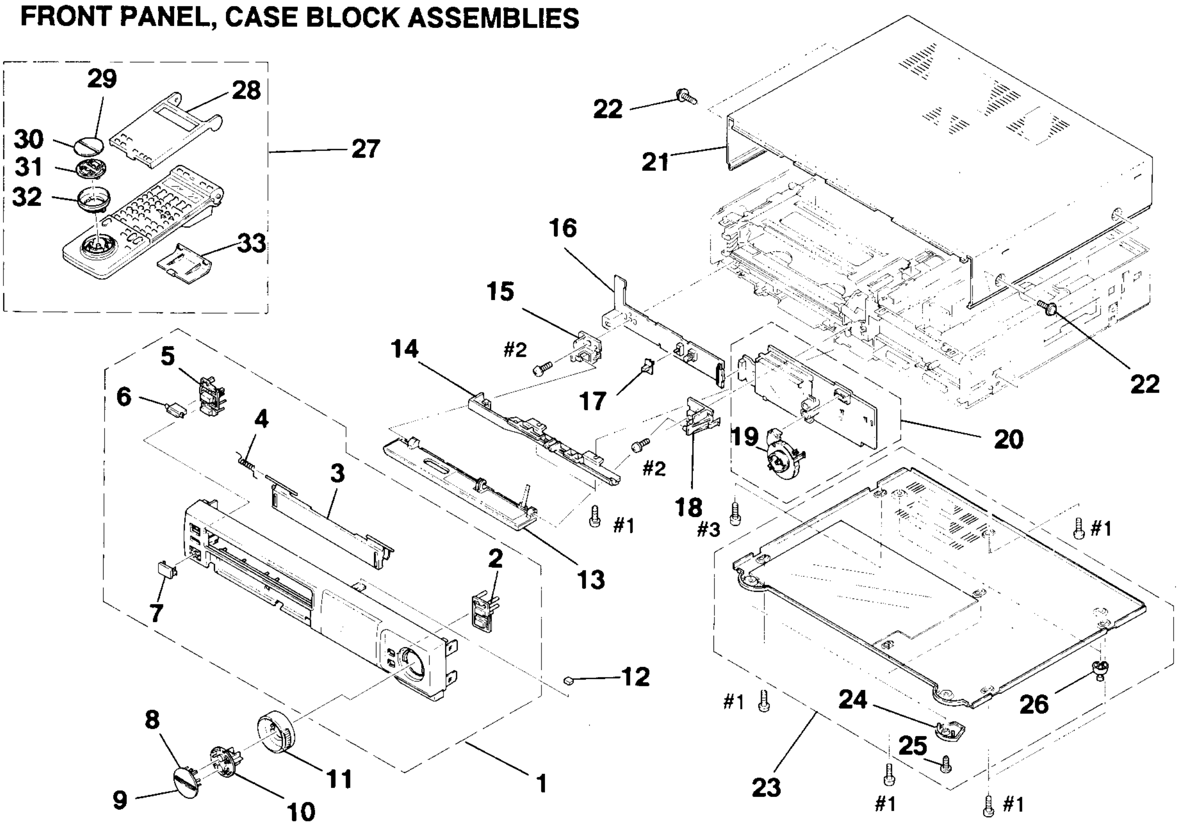
SECTION 5
EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

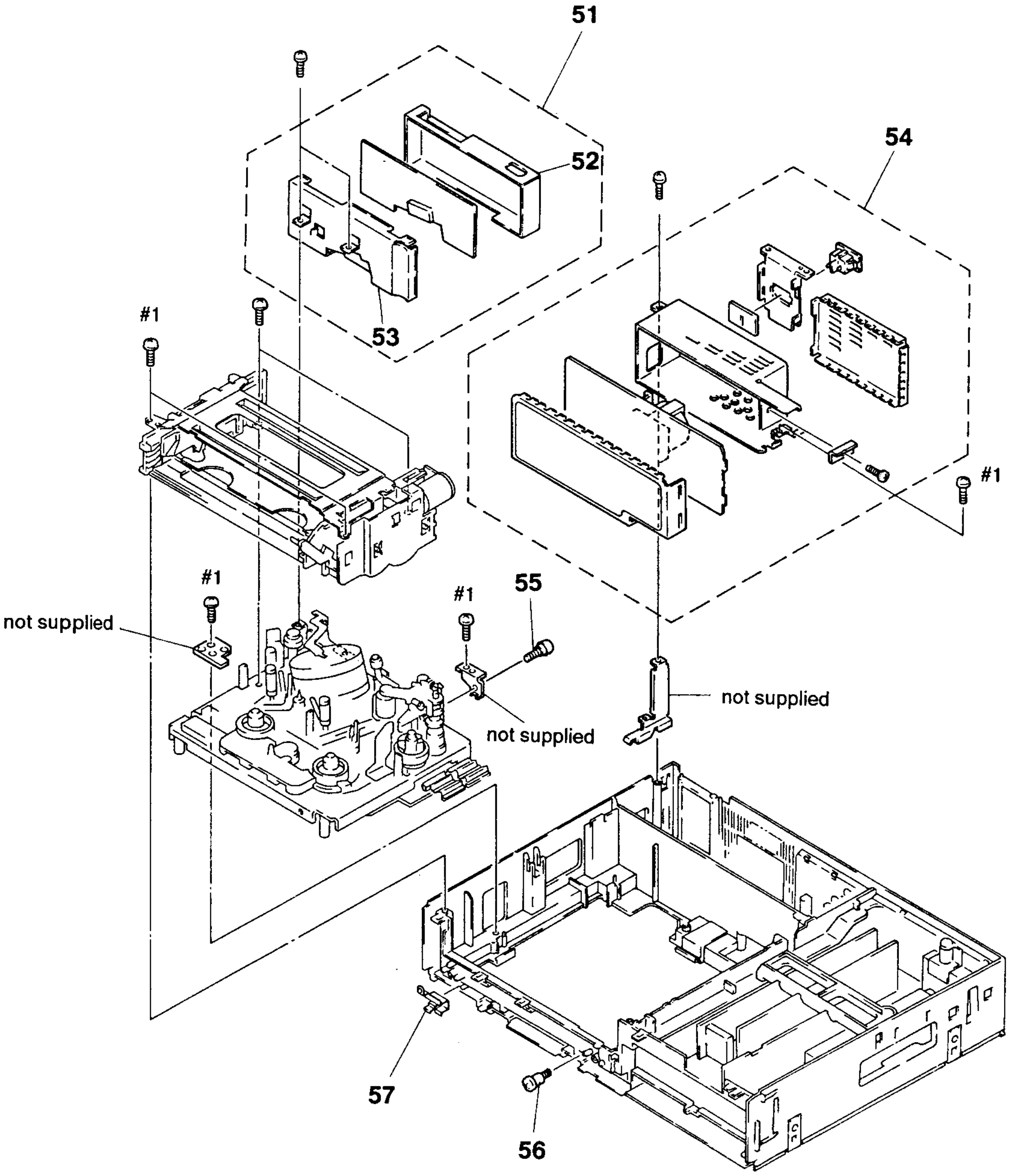
5-1. FRONT PANEL, CASE BLOCK ASSEMBLIES



Ref. No.	Part No.	Description	Remark
1	X-3940-517-1	PANEL ASSY, FRONT (AEP/UB/EI/CP MODEL)	
	X-3940-518-1	PANEL ASSY, FRONT (VP MODEL)	
2	3-941-970-11	BUTTON, PAUSE	
3	3-941-519-11	DOOR, CASSETTE	
4	3-941-520-01	SPRING, FL	
5	3-941-967-01	BUTTON, POWER EJECT	
6	3-941-518-01	TIP, POWER BUTTON	
7	3-741-981-21	WINDOW, LAY CATCHER BLOCK	
8	3-941-510-11	BUTTON, PLAYBACK	
9	3-941-511-11	BUTTON, STOP	
10	3-941-515-01	HOLDER, BUTTON	
11	3-941-512-01	RING, SHUTTLE	
12	9-911-841-XX	CUSHION (B)	
13	1-466-515-11	SWITCH BLOCK, CONTROL (AEP/UB/EI MODEL)	
	1-466-515-21	SWITCH BLOCK, CONTROL (VP MODEL)	
13	1-466-515-71	SWITCH BLOCK, CONTROL (CP MODEL)	
14	3-941-971-11	ESCUTCHEON, FRAME	
15	3-741-966-01	PLATE (LEFT), FULCRUM, DOOR	
16	* 1-639-194-11	MF-126 BOARD	
17	3-744-217-01	KNOB, SELECTION (VP MODEL)	
18	3-741-967-01	PLATE (RIGHT), FULCRUM, DOOR	

Ref. No.	Part No.	Description	Remark
19	1-572-662-11	SWITCH, ROTARY	
20	* A-6721-407-A	MF-125 BOARD, COMPLETE (AEP/EI MODEL)	
	* A-6721-409-A	MF-125 BOARD, COMPLETE (VP MODEL)	
	* A-6721-410-A	MF-125 BOARD, COMPLETE (CP MODEL)	
	* A-6721-412-A	MF-125 BOARD, COMPLETE (UB MODEL)	
21	3-741-985-21	CASE, UPPER	
22	3-710-901-11	SCREW (3X8), TAPPING	
23	X-3940-317-1	PLATE ASSY, BOTTOM	
24	3-941-509-01	INSULATOR	
25	3-721-343-01	SCREW, FIXED, M4X7	
26	3-670-155-11	LEG	
27	1-465-739-11	REMOTE COMMANDER (RMT-V103) (EXCEPT CP MODEL)	
27	1-465-724-31	REMOTE COMMANDER (RMT-V104A) (CP MODEL)	
28	3-943-559-01	COVER, TIMER (EXCEPT CP MODEL)	
	3-943-560-01	COVER, TIMER (CP MODEL)	
29	3-941-617-01	BUTTON, PLAYBACK	
30	3-941-618-01	BUTTON, STOP	
31	3-941-619-01	HOLDER, DIAL	
32	3-941-616-01	RING, SHUTTLE	
33	2-181-766-01	COVER, BATTERY (EXCEPT CP MODEL)	
	3-746-029-01	COVER, BATTERY (CP MODEL)	

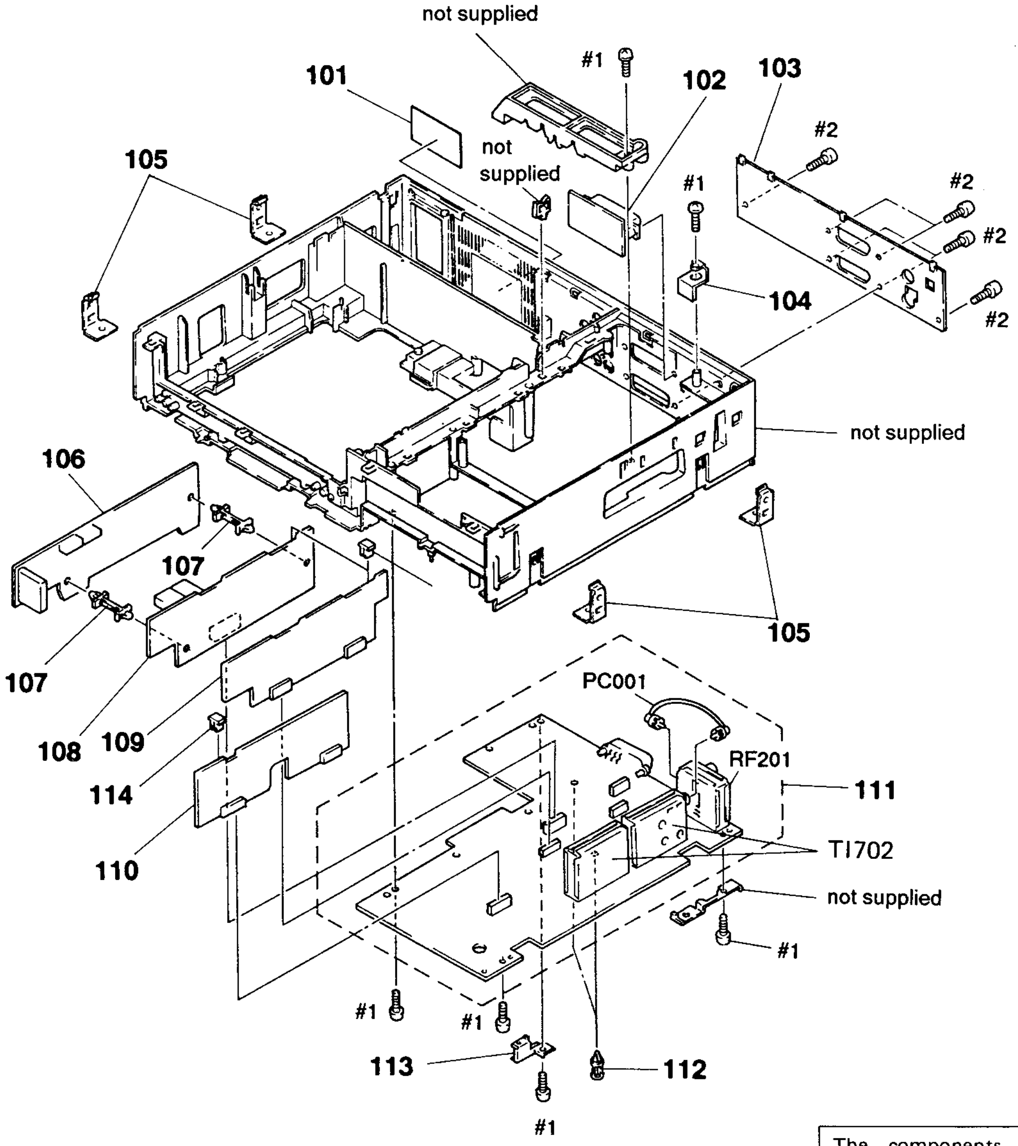
5-2. POWER SUPPLY BLOCK ASSEMBLY


51
52
53
54
#1
#1
#1
#1
55
not supplied
not supplied
not supplied
57
56

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.		Part No.	Description	Remark
51	*	A-6727-327-A	RP-100 BOARD, COMPLETE	
52	*	3-746-014-01	CASE (MAIN), GRP	
53	*	3-746-015-01	CASE (UPPER), GRP	
54	⚠	1-413-635-11	SWITCHING BLOCK (UB MODEL)	
	⚠	1-413-636-11	SWITCHING BLOCK (VP/EI MODEL)	
54	⚠	1-413-637-11	SWITCHING BLOCK (AEP/CP MODEL)	
55		3-736-055-01	SCREW (3X8), TAPPING	
56		3-741-948-01	SCREW (3), SPECIAL (+) TAPPING	
57		3-741-968-01	PLATE, GROUND, MF	

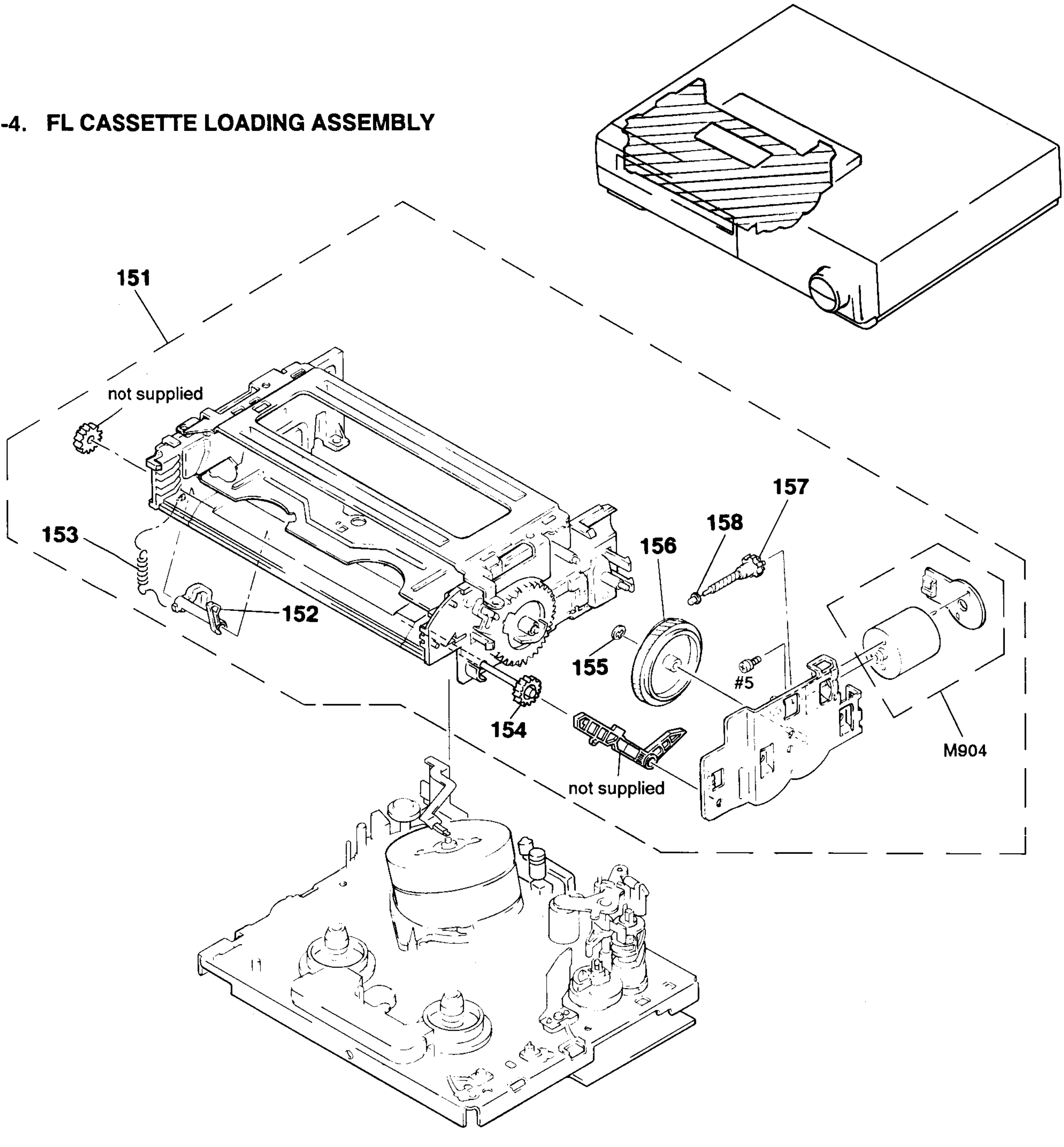
5-3. MAIN BOARD BLOCK ASSEMBLY



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
101	* 3-942-047-01	LABEL, MODEL NUMBER (NO. 2) (AEP MODEL)	
	* 3-942-048-01	LABEL, MODEL NUMBER (VP MODEL)	
	* 3-942-049-01	LABEL, MODEL NUMBER (CP MODEL)	
	* 3-942-550-01	LABEL, MODEL NUMBER (EI MODEL)	
	* 3-942-553-01	LABEL, MODEL NUMBER (UB MODEL)	
102	* A-6754-290-A	CP-53 BOARD, COMPLETE (CP MODEL)	
103	3-942-331-01	PLATE, ORNAMENTAL, JACK (EXCEPT CP MODEL)	
	3-942-331-21	PLATE, ORNAMENTAL, JACK (CP MODEL)	
104	* 3-741-963-01	BRACKET, RF	
105	* 3-741-992-01	STOPPER, UPPER CASE	
106	* A-6726-326-A	PC-54 BOARD, COMPLETE	
107	* 3-710-673-01	SUPPORT, PC BOARD	
108	* A-6726-325-A	YP-11 BOARD, COMPLETE	
109	* A-6754-289-A	CP-52 BOARD, COMPLETE (CP MODEL)	
110	* A-6713-427-A	CV-22 BOARD, COMPLETE (AEP/CP MODEL)	
110	* A-6713-430-A	CV-22 BOARD, COMPLETE (VP MODEL)	
	* A-6713-431-A	CV-22 BOARD, COMPLETE (UB/EI MODEL)	
111	* A-6756-161-A	MA-88 BOARD, COMPLETE (AEP MODEL)	
	* A-6756-165-A	MA-88 BOARD, COMPLETE (VP MODEL)	
	* A-6756-166-A	MA-88 BOARD, COMPLETE (CP MODEL)	
	* A-6756-168-A	MA-88 BOARD, COMPLETE (UB MODEL)	
	* A-6756-171-A	MA-88 BOARD, COMPLETE (EI MODEL)	
112	3-682-057-11	SPACER (SMALL)	
113	* 3-741-962-01	PLATE, GROUND, JMP	
114	* 3-738-240-11	KNOB, PC BOARD	
PC001	1-558-924-21	CABLE, PIN	
RF201	⚠ 1-466-328-11	MODULATOR, RF (RFU-2017) (AEP/VP/CP MODEL)	
RF201	⚠ 1-466-347-11	MODULATOR, RF (RFU-2024) (UB/EI MODEL)	
T1702	⚠ 1-465-744-21	TUNER, VIF (BTF-2U601) (UB MODEL)	
	⚠ 1-465-745-11	TUNER, VIF (BTF-2C401) (VP MODEL)	
	⚠ 1-465-746-11	TUNER, VIF (BTF-2C402) (AEP/CP MODEL)	
	⚠ 1-465-747-21	TUNER, VIF (BTF-2C403) (EI MODEL)	

5-4. FL CASSETTE LOADING ASSEMBLY


151
not supplied
153
152
158
157
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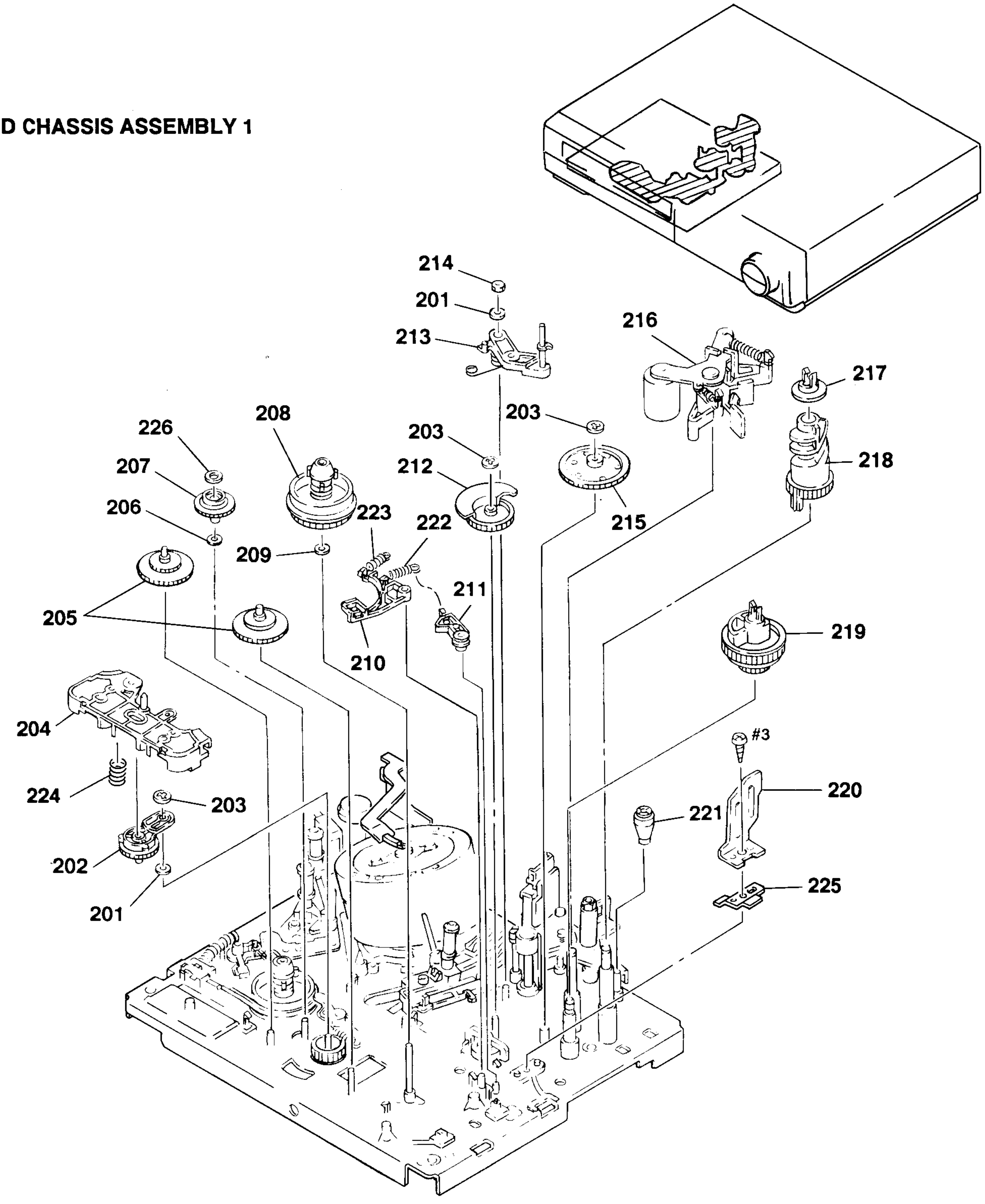
#5
154
not supplied
M904

Ref. No.	Part No.	Description	Remark
151	A-6751-445-A	FL BLOCK ASSY (F45)	
152	3-736-163-01	LEVER, ERASING PROTECTION	
153	3-739-687-01	SPRING, TENSION	
154	X-3727-775-2	GEAR (RIGHT) ASSY, MIDWAY	
155	3-696-510-01	WASHER (3), STOPPER	
156	3-736-164-01	WHEEL (FL), WORM	
157	3-736-100-01	GEAR (FL), WORM	
158	3-716-144-02	RETAINER, WORM	
M904	X-3727-784-1	MOTOR ASSY (CASSETTE LOADING)	

5-5. MD CHASSIS ASSEMBLY 1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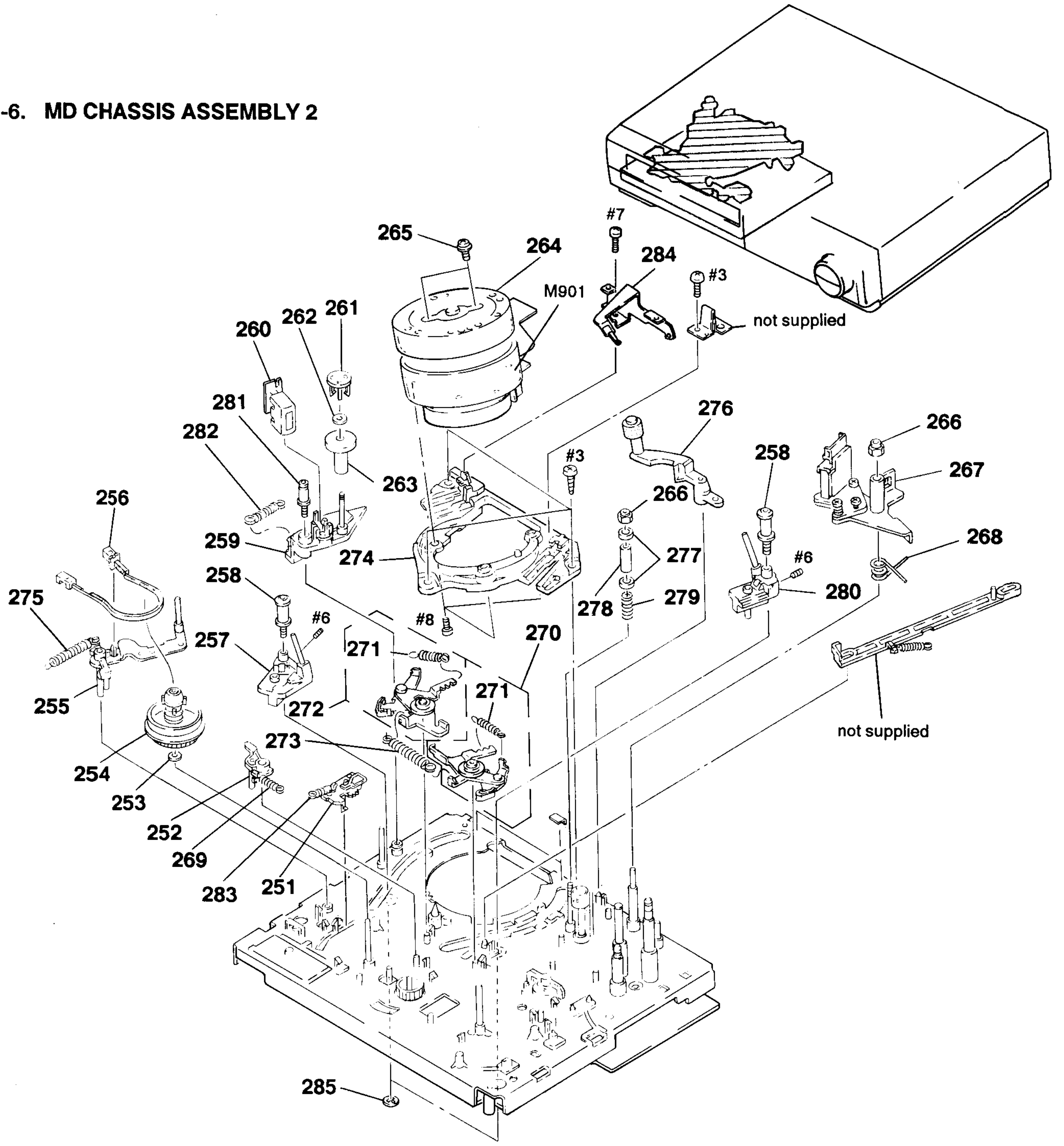
Ref. No.	Part No.	Description	Remark
201	3-701-438-11	WASHER, 2.5	
202	X-3727-776-1	ARM ASSY, PENDULUM	
203	3-669-595-00	WASHER (2), STOPPER	
204	3-736-172-02	RELEASE, LOCK, REEL	
205	X-3727-795-1	GEAR ASSY, RELAY	
206	3-736-074-01	RETAINER (SMALL), THRUST	
207	3-736-037-01	GEAR, REW	
208	X-3727-798-1	TABLE ASSY, REEL	
209	3-738-212-21	RETAINER, THRUST, REEL TABLE	
210	X-3733-335-1	BRAKE ASSY (AT), T SOFT	
211	3-736-105-01	ARM, REV BRAKE	
212	3-736-143-01	GEAR, RVS CAM	
213	X-3729-911-1	ARM ASSY, RVS	
214	3-736-740-01	NUT (M2X0.25), NYLON	
215	3-736-116-01	GEAR, COMMUNICATION	
216	X-3727-770-1	PINCH ROLLER BLOCK ASSY	
217	3-736-111-01	STOPPER	
218	3-736-136-01	CAM, ELEVATOR	
219	3-736-135-01	GEAR, PRESS CAM	
220	3-736-109-01	PLATE, OPEN, LID	
221	3-738-250-01	SCREW, AC ADJUSTMENT	
222	3-736-025-01	SPRING (REV BRAKE), TENSION	
223	3-736-024-01	SPRING, TENSION	
224	3-736-020-11	SPRING, COMPRESSION	
225	3-744-227-01	SPRING (ATOM), FL GROUND	
226	3-736-069-01	RETAINER, SPRING	

5-6. MD CHASSIS ASSEMBLY 2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not supplied
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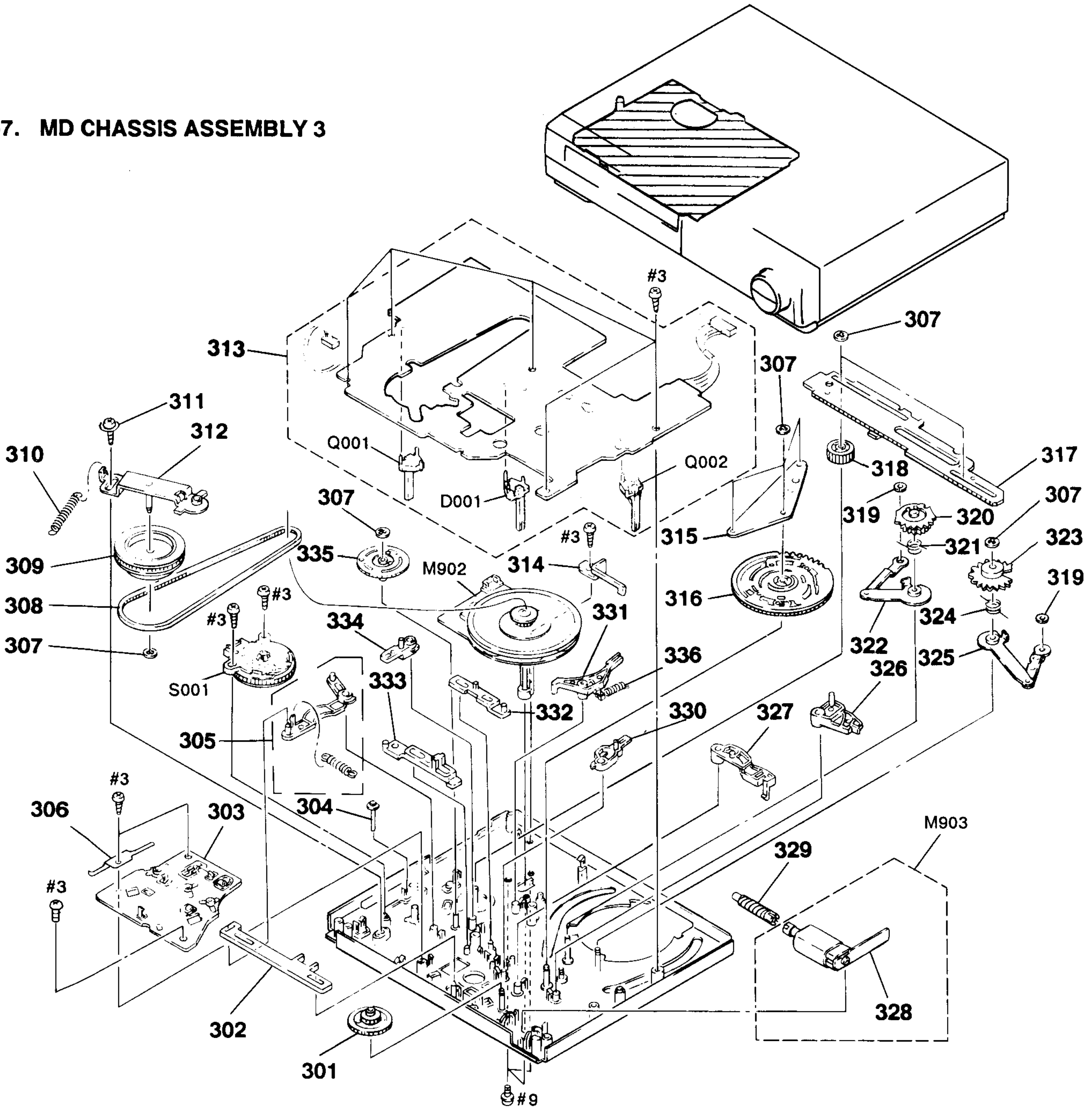
Ref. No.	Part No.	Description	Remark
251	A-6759-483-A	TAKE-UP BLOCK ASSY (AT), S	
252	3-736-075-01	BRAKE, S SOFT	
253	3-738-212-21	RETAINER, THRUST, REEL TABLE	
254	X-3729-935-3	TABLE ASSY, REEL, SUPPLY	
255	3-736-151-11	ARM (POM), TENSION REGULATOR	
256	X-3727-797-1	BAND ASSY, TENSION REGULATOR	
257	X-3727-786-1	SHUTTLE (LEFT) ASSY	
258	X-3733-301-1	ROLLER ASSY, GUIDE	
259	X-3727-767-1	BASE ASSY, STABILIZER	
260	1-543-647-11	HEAD, FE	
261	3-736-082-01	RETAINER, TS THRUST	
262	3-741-925-01	RING, RETAINING	
263	X-3727-771-1	STABLILIZER ASSY, TAPE	
264	1-550-655-11	UPPER DRUM ASSY (DZR-32-R)	
265	2-643-205-01	SCREW (+PSW 3X8)	
266	3-942-866-01	NUT (M3) (3X0.5), NYLON	
267	A-6761-129-A	HEAD BLOCK ASSY, ACE	
268	3-736-042-01	SPRING, TORSION	
269	3-736-047-01	SPRING (S SOFT), TENSION	
270	X-3729-926-1	BRAKE ASSY (2), T	
271	3-738-220-01	SPRING (MAIN BRAKE 2), TENSION	
272	X-3733-336-2	BRAKE ASSY (2) (AT), S	
273	3-738-221-01	SPRING (MAIN BRAKE 1), TENSION	
274	* X-3746-005-1	BASE ASSY (G), DRUM	
275	3-733-389-11	SPRING, TENSION	
276	A-6747-267-A	ARM BLOCK ASSY (S), C ROLLER	
277	3-736-733-01	FLANGE, 7 GUIDE	
278	3-736-730-01	SLEEVE, #7 GUIDE	
279	3-749-099-01	SPRING (#7 GUIDE), COMPRESSION	
280	X-3727-787-1	SHUTTLE (RIGHT) ASSY	
281	X-3727-788-1	ROLLER ASSY, GUIDE, #2	
282	3-736-745-01	SPRING	
283	3-738-284-01	SPRING, TENSION	
284	X-3746-004-1	GROUND ASSY, SHAFT	
285	3-736-073-01	SLIDER, POLYETHYLENE	
M901	1-550-656-11	LOWER DRUM ASSY (DZL-32A-R)	

5-7. MD CHASSIS ASSEMBLY 3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M902
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S001
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M903
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#3
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#9

Ref. No.	Part No.	Description	Remark
301	3-736-015-01	WHEEL (CAM), WORM	
302	3-736-158-01	PLATE, SLIDE, PENDULUM	
303	A-6739-084-A	CHASSIS BLOCK ASSY, SUB	
304	3-736-091-01	PIN, SWITCH	
305	X-3729-924-1	ARM, PENDULUM FUNCTION	
306	3-741-950-01	SPRING (AT), LEAF, SC GROUND	
307	3-669-595-00	WASHER (2), STOPPER	
308	3-736-013-01	BELT, TIMING	
309	X-3727-782-1	PULLEY ASSY	
310	3-736-089-01	SPRING, TENSION	
311	3-733-386-01	SCREW (3X8), WASHER	
312	X-3727-761-1	ARM ASSY, ADJUSTMENT	
313	* A-6754-055-A	MD-40 BOARD, COMPLETE	
314	3-736-744-01	RETAINER, ROTOR	
315	3-733-396-01	HOLDER, CAM GEAR	
316	3-736-176-01	GEAR, CAM	
317	3-736-177-01	PLATE, SLIDE, MODE	
318	3-733-394-01	GEAR, RVS RELAY	
319	3-736-073-01	SLIDER, POLYETHYLENE	
320	3-736-148-01	GEAR (RIGHT), THREADING	
321	3-736-092-01	SPRING (RIGHT), TORSION	
322	X-3727-777-1	ARM (RIGHT) ASSY, THREADING	
323	3-736-147-01	GEAR (LEFT), THREADING	
324	3-736-040-01	SPRING (LEFT), TORSION	
325	X-3727-778-1	ARM (LEFT) ASSY, THREADING	
326	3-736-142-01	ARM, TENSION-REGULATOR FUNCTION	
327	3-736-140-01	ARM, S TAKE-UP	
328	* 1-633-460-11	CA-41 BOARD	
329	3-733-395-01	GEAR (CAM), WORM	
330	3-733-397-01	ARM, BRAKE FUNCTION	
331	X-3733-338-1	BRAKE ASSY (AT), CAP	
332	3-733-398-01	PLATE, SLIDE, BRAKE	
333	3-736-103-01	PLATE, SLIDE, LIMITER	
334	3-736-016-01	ARM, LIMITER FUNCTION	
335	3-736-170-01	GEAR, RKB CAM	
336	3-738-237-01	SPRING (CAP BRAKE), TENSION	
D001	8-719-985-00	DIODE GL451VS1 (LED)	
M902	8-835-394-01	MOTOR, DC U-26F (CAPSTAN)	
M903	X-3733-302-1	MOTOR ASSY, CAM	
Q001	8-729-926-31	PHOTO TRANSISTOR PT483F1S	
Q002	8-729-926-31	PHOTO TRANSISTOR PT483F1S	
S001	1-571-920-11	SWITCH, ROTARY	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref. No.	Part No.	Description				Remark
*	A-6754-287-A	CP-52 BOARD, COMPLETE (CP MODEL)				
		*********************				
		(Ref.No 5,000 Series)				
		< CAPACITOR >				
C101	1-126-154-11	ELECT	47uF	20%	6.3V	
C102	1-126-301-11	ELECT	1uF	20%	50V	
C103	1-244-463-00	ELECT	0.1uF	20%	50V	
C104	1-126-301-11	ELECT	1uF	20%	50V	
C105	1-126-301-11	ELECT	1uF	20%	50V	
C107	1-162-839-11	CERAMIC	0.01uF	10%	16V	
C181	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C182	1-126-154-11	ELECT	47uF	20%	6.3V	
C202	1-126-154-11	ELECT	47uF	20%	6.3V	
C203	1-126-154-11	ELECT	47uF	20%	6.3V	
C204	1-126-154-11	ELECT	47uF	20%	6.3V	
C205	1-126-154-11	ELECT	47uF	20%	6.3V	
C206	1-126-154-11	ELECT	47uF	20%	6.3V	
C207	1-126-154-11	ELECT	47uF	20%	6.3V	
C208	1-126-154-11	ELECT	47uF	20%	6.3V	
C209	1-162-839-11	CERAMIC	0.01uF	10%	16V	
C280	1-162-284-31	CERAMIC	150PF	10%	50V	
C281	1-162-284-31	CERAMIC	150PF	10%	50V	
C282	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C283	1-162-294-31	CERAMIC	0.001uF	10%	50V	
		< CONNECTOR >				
CN101	1-573-122-11	SOCKET, CONNECTOR 12P				
CN102	1-573-122-11	SOCKET, CONNECTOR 12P				
CN103	1-506-490-21	PIN, CONNECTOR 11P				
		< DIODE >				
D001	8-719-940-82	DIODE	SLR-34MC3			
D180	8-719-109-97	DIODE	RD6.8ES-B2			
D181	8-719-109-97	DIODE	RD6.8ES-B2			
D182	8-719-109-97	DIODE	RD6.8ES-B2			
D183	8-719-109-97	DIODE	RD6.8ES-B2			
D280	8-719-109-97	DIODE	RD6.8ES-B2			
D281	8-719-109-97	DIODE	RD6.8ES-B2			
		< IC >				
IC101	8-759-504-94	IC	BA7630S			
IC201	8-759-509-16	IC	XRU4053B			
		< COIL >				
L101	1-408-421-00	INDUCTOR	100uH			
L201	1-408-421-00	INDUCTOR	100uH			
L280	1-410-336-11	INDUCTOR	220uH			
L281	1-410-336-11	INDUCTOR	220uH			
		< TRANSISTOR >				
Q101	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q102	8-729-900-89	TRANSISTOR	DTC144ES			
Q103	8-729-920-68	TRANSISTOR	2SA933S			
Q126	8-729-900-89	TRANSISTOR	DTC144ES			
Q127	8-729-920-68	TRANSISTOR	2SA933S			
Q180	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q201	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q202	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q203	8-729-119-78	TRANSISTOR	2SC2785-HFE			
		< RESISTOR >				
R101	1-249-429-11	CARBON	10K	5%	1/4W	
R102	1-249-429-11	CARBON	10K	5%	1/4W	
R103	1-249-429-11	CARBON	10K	5%	1/4W	
R104	1-249-429-11	CARBON	10K	5%	1/4W	
R106	1-249-429-11	CARBON	10K	5%	1/4W	
R107	1-249-424-11	CARBON	3.9K	5%	1/4W	

Ref. No.	Part No.	Description			Remark
R108	1-249-403-11	CARBON	68	5%	1/4W
R109	1-249-417-11	CARBON	1K	5%	1/4W
R110	1-249-417-11	CARBON	1K	5%	1/4W
R111	1-249-417-11	CARBON	1K	5%	1/4W
R123	1-249-417-11	CARBON	1K	5%	1/4W
R150	1-249-427-11	CARBON	6.8K	5%	1/4W
R151	1-249-425-11	CARBON	4.7K	5%	1/4W
R180	1-249-429-11	CARBON	10K	5%	1/4W
R181	1-249-427-11	CARBON	6.8K	5%	1/4W
R182	1-249-419-11	CARBON	1.5K	5%	1/4W
R201	1-249-421-11	CARBON	2.2K	5%	1/4W
R202	1-249-421-11	CARBON	2.2K	5%	1/4W
R203	1-249-417-11	CARBON	1K	5%	1/4W
R204	1-249-417-11	CARBON	1K	5%	1/4W
R205	1-249-437-11	CARBON	47K	5%	1/4W
R206	1-249-437-11	CARBON	47K	5%	1/4W
R207	1-249-437-11	CARBON	47K	5%	1/4W
R208	1-249-437-11	CARBON	47K	5%	1/4W
R209	1-249-421-11	CARBON	2.2K	5%	1/4W
R210	1-249-405-11	CARBON	100	5%	1/4W
R291	1-249-426-11	CARBON	5.6K	5%	1/4W
R391	1-249-426-11	CARBON	5.6K	5%	1/4W

****

* 1-639-198-11 CP-53 BOARD (CP MODEL)
****
(Ref.No 6,000 Series)

< CONNECTOR >

Ref. No.	Part No.	Description
CN121	* 1-506-490-21	PIN, CONNECTOR 11P
CN122	1-506-485-11	PIN, CONNECTOR 6P

< JACK >

Ref. No.	Part No.	Description
CNJ120	1-561-534-41	SOCKET 21P (CANAL PLUS)

< DIODE >

Ref. No.	Part No.	Description	
D190	8-719-109-97	DIODE	RD6.8ES-B2
D191	8-719-109-97	DIODE	RD6.8ES-B2

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R120	1-249-403-11	CARBON	68	5%	1/4W

****

* A-6713-427-A CV-22 BOARD, COMPLETE (AEP/CP MODEL)
****
* A-6713-430-A CV-22 BOARD, COMPLETE (VP MODEL)
****
* A-6713-431-A CV-22 BOARD, COMPLETE (UB/EI MODEL)
****
(Ref.No 6,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description				Remark
C401	1-162-847-11	CERAMIC	0.047uF	20%	16V	
C402	1-162-854-11	CERAMIC	0.0015uF	20%	16V	
C403	1-124-589-11	ELECT	47uF	20%	16V	
C404	1-102-961-00	CERAMIC	27PF	5%	50V	
C405	1-164-060-11	CERAMIC	39PF	5%	50V	
C406	1-124-589-11	ELECT	47uF	20%	16V	
C407	1-164-058-11	CERAMIC	33PF	5%	50V	(VP MODEL)
C408	1-126-096-11	ELECT	10uF	20%	35V	
C410	1-162-839-11	CERAMIC	0.01uF	10%	16V	
C411	1-124-589-11	ELECT	47uF	20%	16V	
C413	1-162-839-11	CERAMIC	0.01uF	10%	16V	
C414	1-162-839-11	CERAMIC	0.01uF	10%	16V	
C415	1-162-203-31	CERAMIC	15PF	5%	50V	
C416	1-164-052-11	CERAMIC	18PF	5%	50V	
C417	1-162-839-11	CERAMIC	0.01uF	10%	16V	
C419	1-162-835-11	CERAMIC	0.0047uF	20%	16V	
C420	1-164-085-11	CERAMIC	0.001uF	10%	50V	
C421	1-124-925-11	ELECT	2.2uF	20%	100V	
C450	1-126-157-11	ELECT	10uF	20%	16V	
C460	1-126-160-11	ELECT	1uF	20%	50V	
C466	1-124-589-11	ELECT	47uF	20%	16V	
C467	1-162-839-11	CERAMIC	0.01uF	10%	16V	
C490	1-126-154-11	ELECT	47uF	20%	6.3V	
C491	1-161-772-11	CERAMIC	0.1uF	10%	25V	
C492	1-124-903-11	ELECT	1uF	20%	50V	
C494	1-126-160-11	ELECT	1uF	20%	50V	
C495	1-130-475-00	MYLAR	0.0022uF	5%	50V	
C496	1-102-973-00	CERAMIC	100PF	5%	50V	
C801	1-161-772-11	CERAMIC	0.1uF	20%	16V	(VP MODEL)
C802	1-162-847-11	CERAMIC	0.047uF	20%	16V	(VP MODEL)
C804	1-162-847-11	CERAMIC	0.047uF	20%	16V	(VP MODEL)
C806	1-161-057-00	CERAMIC	0.033uF	20%	16V	(VP MODEL)
C810	1-164-075-11	CERAMIC	150PF	10%	50V	(VP MODEL)

< CONNECTOR >

Ref. No.	Part No.	Description
CN401	* 1-563-464-11	SOCKET, CONNECTOR 10P
CN402	* 1-563-464-11	SOCKET, CONNECTOR 10P

< TRIMMER >

Ref. No.	Part No.	Description
CV401	1-141-227-11	CAP, VAR, TRIMMER

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D401	8-719-911-19	DIODE 1SS119	
D402	8-719-911-19	DIODE 1SS119	
D403	8-719-911-19	DIODE 1SS119	
D404	8-719-109-97	DIODE RD6.8ES-B2	
D406	8-719-911-19	DIODE 1SS119	
D407	8-719-974-59	DIODE 1SR139-100	
		< IC >	
IC401	8-759-634-22	IC M50554-182SP	
IC490	8-759-514-54	IC BA7046	
IC801	8-759-030-60	IC SDA5642	(VP MODEL)
IC802	8-759-147-30	IC uPD75004GB-VSX182	(VP MODEL)
		< COIL >	
L401	1-408-421-00	INDUCTOR 100uH	
L402	1-412-470-21	INDUCTOR 22uH	
L403	1-408-415-00	INDUCTOR 33uH	(VP MODEL)
L404	1-408-421-00	INDUCTOR 100uH	
L405	1-408-414-00	INDUCTOR 27uH	
L406	1-408-415-00	INDUCTOR 33uH	
L408	1-408-421-00	INDUCTOR 100uH	
L490	1-408-421-00	INDUCTOR 100uH	
L841	1-408-409-00	INDUCTOR 10uH	(VP MODEL)
		< TRANSISTOR >	
Q401	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q402	8-729-119-78	TRANSISTOR 2SC2785-HFE	(VP. MODEL)
Q403	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q404	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q405	8-729-904-39	TRANSISTOR DTC114TS	
Q406	8-729-920-68	TRANSISTOR 2SA933S-QRT	
Q407	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q451	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		< RESISTOR >	
R401	1-249-429-11	CARBON 10K 5% 1/4W	
R402	1-249-417-11	CARBON 1K 5% 1/4W	
R403	1-249-421-11	CARBON 2.2K 5% 1/4W	
R404	1-249-413-11	CARBON 470 5% 1/4W	
R405	1-249-413-11	CARBON 470 5% 1/4W	
R406	1-249-433-11	CARBON 22K 5% 1/4W	
R407	1-249-425-11	CARBON 4.7K 5% 1/4W	
R408	1-249-431-11	CARBON 15K 5% 1/4W	
R409	1-249-403-11	CARBON 68 5% 1/4W	
R410	1-249-429-11	CARBON 10K 5% 1/4W	(VP MODEL)
R411	1-249-423-11	CARBON 3.3K 5% 1/4W	
R413	1-249-414-11	CARBON 560 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R414	1-249-433-11	CARBON 22K 5% 1/4W	
R415	1-249-409-11	CARBON 220 5% 1/4W	
R418	1-249-441-11	CARBON 100K 5% 1/4W	
R419	1-249-414-11	CARBON 560 5% 1/4W	
R420	1-249-420-11	CARBON 1.8K 5% 1/4W	
R424	1-249-435-11	CARBON 33K 5% 1/4W	
R425	1-249-421-11	CARBON 2.2K 5% 1/4W	
R426	1-249-422-11	CARBON 2.7K 5% 1/4W	
R427	1-249-415-11	CARBON 680 5% 1/4W	
R428	1-249-414-11	CARBON 560 5% 1/4W	
R429	1-249-422-11	CARBON 2.7K 5% 1/4W	
R430	1-249-424-11	CARBON 3.9K 5% 1/4W	
R431	1-249-421-11	CARBON 2.2K 5% 1/4W	
R432	1-249-423-11	CARBON 3.3K 5% 1/4W	
R433	1-249-429-11	CARBON 10K 5% 1/4W	(VP MODEL)
R434	1-249-421-11	CARBON 2.2K 5% 1/4W	
R435	1-247-903-00	CARBON 1M 5% 1/4W	
R436	1-249-422-11	CARBON 2.7K 5% 1/4W	
R437	1-249-429-11	CARBON 10K 5% 1/4W	
R438	1-249-424-11	CARBON 3.9K 5% 1/4W	
R440	1-249-417-11	CARBON 1K 5% 1/4W	
R441	1-249-419-11	CARBON 1.5K 5% 1/4W	
R460	1-249-417-11	CARBON 1K 5% 1/4W	
R461	1-249-441-11	CARBON 100K 5% 1/4W	
R462	1-249-413-11	CARBON 470 5% 1/4W	
R463	1-249-413-11	CARBON 470 5% 1/4W	
R491	1-247-895-00	CARBON 470K 5% 1/4W	
R492	1-249-429-11	CARBON 10K 5% 1/4W	
R493	1-247-891-00	CARBON 330K 5% 1/4W	
R494	1-249-441-11	CARBON 100K 5% 1/4W	
R801	1-249-429-11	CARBON 10K 5% 1/4W	(VP MODEL)
R802	1-249-429-11	CARBON 10K 5% 1/4W	(VP MODEL)
R803	1-249-441-11	CARBON 100K 5% 1/4W	(VP MODEL)
R804	1-247-901-11	CARBON 820K 5% 1/4W	(VP MODEL)
R805	1-249-405-11	CARBON 100K 5% 1/4W	(VP MODEL)
R806	1-247-901-11	CARBON 820K 5% 1/4W	(VP MODEL)
R807	1-249-426-11	CARBON 5.6K 5% 1/4W	(VP MODEL)
R808	1-247-903-00	CARBON 1M 5% 1/4W	(VP MODEL)
R810	1-249-421-11	CARBON 2.2K 5% 1/4W	(VP MODEL)
R812	1-249-429-11	CARBON 10K 5% 1/4W	(VP MODEL)
		< VARIABLE RESISTOR >	
RV491	1-238-019-11	RES, ADJ, CARBON 47K	
		< CRYSTAL >	
X401	1-577-289-11	VIBRATOR, CRYSTAL 17.7MHZ	
X801	1-577-101-11	VIBRATOR, CERAMIC 4.19MHz	(VP MODEL)

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Ref. No.	Part No.	Description	Remark
	* A-6756-161-A	MA-88 BOARD, COMPLETE (AEP MODEL)	
		********************	
	* A-6756-165-A	MA-88 BOARD, COMPLETE (VP MODEL)	
		********************	
	* A-6756-166-A	MA-88 BOARD, COMPLETE (CP MODEL)	
		********************	
	* A-6756-168-A	MA-88 BOARD, COMPLETE (UB MODEL)	
		********************	
	* A-6756-171-A	MA-88 BOARD, COMPLETE (EI MODEL)	
		********************	
		(Ref.No 4,000 Series)	
		< BUZZER >	
BZ501	1-529-070-11	BUZZER	
		< CAPACITOR >	
C101	1-162-849-11	CERAMIC 0.068uF 10% 16V	
C102	1-124-234-00	ELECT 22uF 20% 16V	
C103	1-124-443-00	ELECT 100uF 20% 10V	
C104	1-161-039-00	CERAMIC 0.001uF 10% 50V	
C105	1-162-849-11	CERAMIC 0.068uF 10% 16V	
C106	1-124-925-11	ELECT 2.2uF 20% 100V	
C107	1-164-159-11	CERAMIC 0.1uF 50V	
C108	1-161-047-00	CERAMIC 0.0047uF 10% 50V	
C110	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C111	1-126-154-11	ELECT 47uF 20% 6.3V	
C112	1-126-163-11	ELECT 4.7uF 20% 50V	
C201	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C202	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C203	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C204	1-101-361-00	CERAMIC 150PF 5% 50V	
C205	1-164-085-11	CERAMIC 0.001uF 10% 50V	
C206	1-162-839-11	CERAMIC 0.01uF 10% 16V	
C207	1-124-248-00	ELECT 22uF 20% 35V	
C208	1-124-248-00	ELECT 22uF 20% 35V	
C211	1-124-589-11	ELECT 47uF 20% 16V	
C212	1-124-589-11	ELECT 47uF 20% 16V	
C213	1-124-589-11	ELECT 47uF 20% 16V	
C214	1-101-361-00	CERAMIC 150PF 5% 50V	
C215	1-164-085-11	CERAMIC 0.001uF 10% 50V	
C216	1-124-589-11	ELECT 47uF 20% 16V	
C217	1-124-257-00	ELECT 2.2uF 20% 50V	
C218	1-124-257-00	ELECT 2.2uF 20% 50V	
C219	1-124-443-00	ELECT 100uF 20% 10V	
C221	1-124-234-00	ELECT 22uF 20% 16V	
C222	1-126-154-11	ELECT 47uF 20% 6.3V	
C223	1-124-589-11	ELECT 47uF 20% 16V	
C224	1-162-839-11	CERAMIC 0.01uF 10% 16V	
C225	1-124-589-11	ELECT 47uF 20% 16V	
C231	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C301	1-126-160-11	ELECT 1uF 20% 50V	
C302	1-124-925-11	ELECT 2.2uF 20% 100V	
C303	1-130-483-00	MYLAR 0.01uF 5% 50V	
C304	1-126-160-11	ELECT 1uF 20% 50V	
C305	1-124-903-11	ELECT 1uF 20% 50V	
C306	1-124-907-11	ELECT 10uF 20% 50V	
C307	1-126-160-11	ELECT 1uF 20% 50V	
C308	1-164-070-11	CERAMIC 100PF 5% 50V	
C309	1-164-070-11	CERAMIC 100PF 5% 50V	
C310	1-164-076-11	CERAMIC 180PF 10% 50V	
C311	1-124-925-11	ELECT 2.2uF 20% 100V	
C314	1-126-163-11	ELECT 4.7uF 20% 50V	
C315	1-126-160-11	ELECT 1uF 20% 50V	
C317	1-130-483-00	MYLAR 0.01uF 5% 50V	
C318	1-126-160-11	ELECT 1uF 20% 50V	
C319	1-126-160-11	ELECT 1uF 20% 50V	
C320	1-126-163-11	ELECT 4.7uF 20% 50V	
C321	1-124-589-11	ELECT 47uF 20% 16V	
C322	1-126-160-11	ELECT 1uF 20% 50V	
C323	1-124-034-51	ELECT 33uF 20% 16V	
C325	1-136-558-11	FILM 0.0039uF 10% 630V	
C326	1-162-839-11	CERAMIC 0.01uF 10% 16V	
C327	1-164-087-11	CERAMIC 0.0015uF 10% 50V	
C329	1-130-471-00	MYLAR 0.001uF 5% 50V	
C330	1-109-675-11	MICA 120PF 1% 500V	
C331	1-164-094-11	CERAMIC 0.0068uF 10% 25V	
C391	1-124-589-11	ELECT 47uF 20% 16V	
C401	1-130-495-00	MYLAR 0.1uF 5% 50V	
C403	1-130-487-00	MYLAR 0.022uF 5% 50V	
C405	1-126-101-11	ELECT 100uF 20% 16V	
C407	1-123-356-00	ELECT 10uF 20% 16V	
C410	1-124-234-00	ELECT 22uF 20% 16V	
C411	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C501	1-124-477-11	ELECT 47uF 20% 25V	
C502	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C503	1-124-907-11	ELECT 10uF 20% 50V	
C504	1-164-096-11	CERAMIC 0.01uF 50V	
C505	1-124-478-11	ELECT 100uF 20% 25V	
C512	1-164-052-11	CERAMIC 18PF 5% 50V	
C513	1-164-052-11	CERAMIC 18PF 5% 50V	
C514	1-164-087-11	CERAMIC 0.0015uF 10% 50V	
C700	1-124-234-00	ELECT 22uF 20% 16V	
C702	1-124-589-11	ELECT 47uF 20% 16V	
C703	1-124-122-11	ELECT 100uF 20% 50V	
C705	1-164-096-11	CERAMIC 0.01uF 50V	
C710	1-126-233-11	ELECT 22uF 20% 50V	
C711	1-164-056-11	CERAMIC 27PF 5% 50V	
C712	1-162-839-11	CERAMIC 0.01uF 10% 16V	
C713	1-164-056-11	CERAMIC 27PF 5% 50V	(UB MODEL)

Ref. No.	Part No.	Description	Remark
C713	1-164-064-11	CERAMIC 56PF 5% 50V	(EXCEPT UB MODEL)
C715	1-124-443-00	ELECT 100uF 20% 10V	
C716	1-101-886-00	CERAMIC 62PF 5% 50V	
C717	1-124-034-51	ELECT 33uF 20% 16V	
C718	1-164-089-11	CERAMIC 0.0022uF 50V	
C719	1-164-089-11	CERAMIC 0.0022uF 50V	
C720	1-162-842-11	CERAMIC 0.018uF 10% 16V	
C721	1-124-927-11	ELECT 4.7uF 20% 100V	
C751	1-162-827-11	CERAMIC 0.001uF 10% 16V	(VP MODEL)
C752	1-162-827-11	CERAMIC 0.001uF 10% 16V	(VP MODEL)
C753	1-162-294-31	CERAMIC 0.001uF 10% 50V	(VP MODEL)
C754	1-162-827-11	CERAMIC 0.001uF 10% 16V	(VP MODEL)
C755	1-162-827-11	CERAMIC 0.001uF 10% 16V	(VP MODEL)
C759	1-126-154-11	ELECT 47uF 20% 6.3V	
C760	1-162-839-11	CERAMIC 0.01uF 10% 16V	
C761	1-164-050-11	CERAMIC 15PF 5% 50V	(UB MODEL)
C762	1-124-477-11	ELECT 47uF 20% 25V	
		< CONNECTOR >	
CN101	* 1-508-742-00	PIN. CONNECTOR 3P	
CN102	* 1-508-742-21	PIN. CONNECTOR 3P	
CN201	1-561-534-00	SOCKET 21P (EURO-AV)	
CN202	1-506-473-11	CONNECTOR 8P. MALE	
CN203	* 1-568-786-11	PIN. CONNECTOR 9P	
CN301	* 1-508-742-00	PIN. CONNECTOR 3P	
CN302	* 1-508-797-00	PIN. CONNECTOR 4P	
CN303	* 1-508-742-00	PIN. CONNECTOR 3P	
CN401	* 1-506-981-11	PIN. CONNECTOR 10P	
CN402	* 1-506-981-11	PIN. CONNECTOR 10P	
CN501	1-569-344-11	CONNECTOR. BOARD TO BOARD 19P	
CN502	1-569-344-11	CONNECTOR. BOARD TO BOARD 19P	
CN601	1-573-121-11	PIN. CONNECTOR 12P	(CP MODEL)
CN602	1-506-471-11	PIN. CONNECTOR 6P	(CP MODEL)
CN603	1-573-121-11	PIN. CONNECTOR 12P	(CP MODEL)
CN701	* 1-565-439-11	PIN. CONNECTOR (PCB) 10P	
CN702	* 1-565-343-11	PIN. CONNECTOR (PC BOARD) 7P	
CN903	* 1-568-787-11	PIN. CONNECTOR 10P	
CN904	1-569-338-11	CONNECTOR. BOARD TO BOARD 19P	
CN907	1-569-338-11	CONNECTOR. BOARD TO BOARD 19P	
		< DIODE >	
D201	8-719-974-59	DIODE 1SR139-100	
D202	8-719-109-97	DIODE RD6.8ES-B2	
D203	8-719-109-97	DIODE RD6.8ES-B2	
D206	8-719-109-97	DIODE RD6.8ES-B2	
D207	8-719-109-97	DIODE RD6.8ES-B2	
D208	8-719-109-97	DIODE RD6.8ES-B2	
D209	8-719-109-97	DIODE RD6.8ES-B2	
D210	8-719-109-97	DIODE RD6.8ES-B2	

Ref. No.	Part No.	Description	Remark
D220	8-719-911-19	DIODE 1SS119	
D250	8-719-109-97	DIODE RD6.8ES-B2	
D404	8-719-109-85	DIODE RD5.1ES-B2	
D501	8-719-109-97	DIODE RD6.8ES-B2	
D505	8-719-911-19	DIODE 1SS119	
D701	8-719-110-78	DIODE RD33ES-B2	
		< IC >	
IC101	8-759-246-14	IC TA8823N	
IC201	8-759-007-21	IC MC74HC4053N	
IC301	8-759-513-18	IC BA7767AS	
IC401	8-759-990-82	IC TL082CP	
IC402	8-759-513-90	IC XRA10358	
IC404	⚠ 8-759-983-45	IC BA6238A	
IC501	8-752-817-87	IC CXP80624-209Q	
IC703	8-759-981-68	IC LM2903S	
		< COIL >	
L101	1-408-409-00	INDUCTOR 10uH	
L201	1-410-521-11	INDUCTOR 100uH	(EXCEPT CP MODEL)
L202	1-408-421-00	INDUCTOR 100uH	(EXCEPT CP MODEL)
L203	1-408-421-00	INDUCTOR 100uH	(EXCEPT CP MODEL)
L204	1-408-425-00	INDUCTOR 220uH	
L205	1-408-425-00	INDUCTOR 220uH	
L206	1-408-421-00	INDUCTOR 100uH	
L207	1-408-422-00	INDUCTOR 120uH	
L208	1-410-521-11	INDUCTOR 100uH	
L209	1-408-415-00	INDUCTOR 33uH	
L250	1-410-367-21	INDUCTOR 120uH	
L252	1-410-521-11	INDUCTOR 100uH	(CP MODEL)
L253	1-410-521-11	INDUCTOR 100uH	(CP MODEL)
L301	1-407-503-00	INDUCTOR 8.2mH	
L302	1-408-409-00	INDUCTOR 10uH	
L309	1-408-409-00	INDUCTOR 10uH	
L401	1-408-409-00	INDUCTOR 10uH	
L501	1-408-409-00	INDUCTOR 10uH	
L550	1-410-321-21	INDUCTOR 2.7uH	
L551	1-410-321-21	INDUCTOR 2.7uH	
L552	1-410-321-21	INDUCTOR 2.7uH	
L553	1-410-321-21	INDUCTOR 2.7uH	
L554	1-410-522-11	INDUCTOR 120uH	
L701	1-408-409-00	INDUCTOR 10uH	
L702	1-408-425-00	INDUCTOR 220uH	
L703	1-408-413-00	INDUCTOR 22uH	(EXCEPT EI MODEL)
L703	1-408-414-06	INDUCTOR 27uH	(EI MODEL)
L705	1-408-413-00	INDUCTOR 22uH	(UB MODEL)
L705	1-408-415-00	INDUCTOR 33uH	(EXCEPT UB MODEL)
L706	1-410-509-11	INDUCTOR 10uH	
L710	1-408-413-00	INDUCTOR 22uH	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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Ref. No.	Part No.	Description	Remark
		< PIN CABLE >	
PC001	1-558-924-21	CABLE, PIN	
		< TRANSISTOR >	
Q201	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q202	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q203	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q204	8-729-920-68	TRANSISTOR 2SA933S-QRT	
Q205	8-729-900-89	TRANSISTOR DTC144ES	
Q206	8-729-920-68	TRANSISTOR 2SA933S-QRT	
Q220	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q301	8-729-111-55	TRANSISTOR 2SD1312-K	
Q401	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q402	8-729-920-68	TRANSISTOR 2SA933S-QRT	
Q501	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q502	8-729-900-89	TRANSISTOR DTC144ES	
Q503	8-729-900-89	TRANSISTOR DTC144ES	
Q710	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q711	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q712	8-729-920-68	TRANSISTOR 2SA933S-QRT	
Q751	8-729-111-55	TRANSISTOR 2SD1312-K	
		< RESISTOR >	
R102	1-249-439-11	CARBON 68K 5% 1/4W	
R103	1-249-441-11	CARBON 100K 5% 1/4W	
R104	1-249-441-11	CARBON 100K 5% 1/4W	
R106	1-249-435-11	CARBON 33K 5% 1/4W	
R107	1-249-411-11	CARBON 330 5% 1/4W	
R108	1-249-425-11	CARBON 4.7K 5% 1/4W	
R110	1-249-425-11	CARBON 4.7K 5% 1/4W	
R112	1-249-405-11	CARBON 100 5% 1/4W	
R154	1-247-901-11	CARBON 820K 5% 1/4W	
R201	1-249-429-11	CARBON 10K 5% 1/4W	
R202	1-249-429-11	CARBON 10K 5% 1/4W	
R203	1-249-429-11	CARBON 10K 5% 1/4W	
R204	1-249-417-11	CARBON 1K 5% 1/4W	
R205	1-249-417-11	CARBON 1K 5% 1/4W	
R206	1-249-417-11	CARBON 1K 5% 1/4W	
R207	1-249-417-11	CARBON 1K 5% 1/4W	
R208	1-249-437-11	CARBON 47K 5% 1/4W	
R209	1-249-437-11	CARBON 47K 5% 1/4W	
R210	1-249-437-11	CARBON 47K 5% 1/4W	
R211	1-249-439-11	CARBON 68K 5% 1/4W	
R212	1-249-421-11	CARBON 2.2K 5% 1/4W	
R213	1-249-429-11	CARBON 10K 5% 1/4W	
R214	1-249-427-11	CARBON 6.8K 5% 1/4W	
R215	1-249-419-11	CARBON 1.5K 5% 1/4W	
R216	1-249-404-00	CARBON 82 5% 1/4W	
R217	1-249-417-11	CARBON 1K 5% 1/4W	
R218	1-249-417-11	CARBON 1K 5% 1/4W	
R219	1-249-408-11	CARBON 180 5% 1/4W	
R220	1-249-417-11	CARBON 1K 5% 1/4W	
R221	1-249-426-11	CARBON 5.6K 5% 1/4W	
R222	1-249-408-11	CARBON 180 5% 1/4W	
R223	1-249-409-11	CARBON 220 5% 1/4W	
R224	1-249-403-11	CARBON 68 5% 1/4W	
R225	1-249-440-11	CARBON 82K 5% 1/4W	
R226	1-249-429-11	CARBON 10K 5% 1/4W	
R228	1-249-421-11	CARBON 2.2K 5% 1/4W	
R229	1-249-429-11	CARBON 10K 5% 1/4W	
R240	1-249-429-11	CARBON 10K 5% 1/4W	
R300	1-249-393-11	CARBON 10 5% 1/4W	
R301	1-249-417-11	CARBON 1K 5% 1/4W	
R302	1-247-901-11	CARBON 820K 5% 1/4W	
R303	1-249-428-11	CARBON 8.2K 5% 1/4W	
R304	1-249-428-11	CARBON 8.2K 5% 1/4W	
R305	1-249-421-11	CARBON 2.2K 5% 1/4W	
R306	1-249-429-11	CARBON 10K 5% 1/4W	
R307	1-249-418-11	CARBON 1.2K 5% 1/4W	
R308	1-249-439-11	CARBON 68K 5% 1/4W	
R309	1-247-903-00	CARBON 1M 5% 1/4W	
R310	1-249-429-11	CARBON 10K 5% 1/4W	
R311	1-249-436-11	CARBON 39K 5% 1/4W	
R312	1-249-441-11	CARBON 100K 5% 1/4W	
R313	1-249-441-11	CARBON 100K 5% 1/4W	
R314	1-249-435-11	CARBON 33K 5% 1/4W	
R318	1-249-417-11	CARBON 1K 5% 1/4W	
R320	1-249-426-11	CARBON 5.6K 5% 1/4W	
R321	1-249-415-11	CARBON 680 5% 1/4W	
R322	1-249-415-11	CARBON 680 5% 1/4W	(VP MODEL)
R322	1-249-415-11	CARBON 680 5% 1/4W	(EXCEPT VP MODEL)
R323	1-249-429-11	CARBON 10K 5% 1/4W	
R324	1-249-429-11	CARBON 10K 5% 1/4W	
R326	1-249-429-11	CARBON 10K 5% 1/4W	
R327	1-249-387-11	CARBON 3.3 5% 1/4W	
R329	1-249-414-11	CARBON 560 5% 1/4W	
R330	1-249-428-11	CARBON 8.2K 5% 1/4W	
R331	1-249-417-11	CARBON 1K 5% 1/4W	
R401	1-247-885-00	CARBON 180K 5% 1/4W	
R402	1-249-415-11	CARBON 680 5% 1/4W	
R403	1-249-429-11	CARBON 10K 5% 1/4W	
R404	1-249-415-11	CARBON 680 5% 1/4W	
R405	1-249-423-11	CARBON 3.3K 5% 1/4W	
R406	1-249-423-11	CARBON 3.3K 5% 1/4W	
R408	1-249-418-11	CARBON 1.2K 5% 1/4W	
R409	1-249-429-11	CARBON 10K 5% 1/4W	
R410	1-249-429-11	CARBON 10K 5% 1/4W	

Ref. No.	Part No.	Description				Remark
R411	1-249-429-11	CARBON	10K	5%	1/4W	
R412	1-249-429-11	CARBON	10K	5%	1/4W	
R413	1-249-417-11	CARBON	1K	5%	1/4W	
R414	1-249-436-11	CARBON	39K	5%	1/4W	
R418	1-249-413-11	CARBON	470	5%	1/4W	
R501	1-249-417-11	CARBON	1K	5%	1/4W	
R502	1-249-437-11	CARBON	47K	5%	1/4W	
R503	1-249-429-11	CARBON	10K	5%	1/4W	
R505	1-249-427-11	CARBON	6.8K	5%	1/4W	
R510	1-249-421-11	CARBON	2.2K	5%	1/4W	
R519	1-249-417-11	CARBON	1K	5%	1/4W	
R520	1-249-433-11	CARBON	22K	5%	1/4W	
R521	1-249-433-11	CARBON	22K	5%	1/4W	
R522	1-249-433-11	CARBON	22K	5%	1/4W	
R523	1-249-433-11	CARBON	22K	5%	1/4W	
R524	1-249-433-11	CARBON	22K	5%	1/4W	
R525	1-249-433-11	CARBON	22K	5%	1/4W	
R526	⚠ 1-247-705-11	CARBON	270	5%	1/4W	
R527	1-249-414-11	CARBON	560	5%	1/4W	
R529	1-249-429-11	CARBON	10K	5%	1/4W	
R530	1-249-429-11	CARBON	10K	5%	1/4W	
R533	1-249-417-11	CARBON	1K	5%	1/4W	
R535	1-249-429-11	CARBON	10K	5%	1/4W	
R536	1-249-429-11	CARBON	10K	5%	1/4W	
R551	1-249-437-11	CARBON	47K	5%	1/4W	
R552	1-249-437-11	CARBON	47K	5%	1/4W	
R553	1-249-437-11	CARBON	47K	5%	1/4W	
R554	1-249-437-11	CARBON	47K	5%	1/4W	
R555	1-249-437-11	CARBON	47K	5%	1/4W	
R556	1-249-437-11	CARBON	47K	5%	1/4W	
R557	1-249-437-11	CARBON	47K	5%	1/4W	
R559	1-249-437-11	CARBON	47K	5%	1/4W	
R560	1-249-437-11	CARBON	47K	5%	1/4W	
R562	1-249-437-11	CARBON	47K	5%	1/4W	
R563	1-249-437-11	CARBON	47K	5%	1/4W	
R564	1-249-417-11	CARBON	1K	5%	1/4W	
R700	1-249-435-11	CARBON	33K	5%	1/4W	
R703	1-249-417-11	CARBON	1K	5%	1/4W	
R709	1-249-417-11	CARBON	1K	5%	1/4W	
R712	1-249-409-11	CARBON	220	5%	1/4W	
R713	1-249-417-11	CARBON	1K	5%	1/4W	
R714	1-249-421-11	CARBON	2.2K	5%	1/4W	
R715	1-249-405-11	CARBON	100	5%	1/4W	
R716	1-249-417-11	CARBON	1K	5%	1/4W	
R717	1-249-417-11	CARBON	1K	5%	1/4W	
R720	1-249-417-11	CARBON	1K	5%	1/4W	
R722	1-249-417-11	CARBON	1K	5%	1/4W	
R723	1-249-417-11	CARBON	1K	5%	1/4W	
R725	1-247-826-00	CARBON	620	5%	1/4W	(UB MODEL)
R725	1-249-417-11	CARBON	1K	5%	1/4W	(EXCEPT UB MODEL)
R726	1-249-425-11	CARBON	4.7K	5%	1/4W	
R727	1-249-425-11	CARBON	4.7K	5%	1/4W	
R728	1-249-405-11	CARBON	100	5%	1/4W	
R732	1-249-417-11	CARBON	1K	5%	1/4W	
R735	1-249-423-11	CARBON	3.3K	5%	1/4W	
R737	1-249-424-11	CARBON	3.9K	5%	1/4W	
R751	1-249-424-11	CARBON	3.9K	5%	1/4W	
R752	1-249-435-11	CARBON	33K	5%	1/4W	
R753	1-249-440-11	CARBON	82K	5%	1/4W	
R754	1-249-441-11	CARBON	100K	5%	1/4W	
R755	1-249-435-11	CARBON	33K	5%	1/4W	
R756	1-249-424-11	CARBON	3.9K	5%	1/4W	
R761	1-249-417-11	CARBON	1K	5%	1/4W	
R762	1-249-417-11	CARBON	1K	5%	1/4W	

< MODULATOR >

Ref. No.	Part No.	Description	Remark
RF201	⚠ 1-466-328-11	MODULATOR, RF (RFU-2017)	(AEP/VP/CP MODEL)
RF201	⚠ 1-466-347-11	MODULATOR, RF (RFU-2024)	(UB/EI MODEL)

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV301	1-238-019-11	RES, ADJ, CARBON 47K	
RV501	1-238-016-11	RES, ADJ, CARBON 10K	

< TRANSFORMER >

Ref. No.	Part No.	Description	Remark
T301	1-433-330-11	TRANSFORMER, BIAS OSCILLATION	

< TUNER >

Ref. No.	Part No.	Description	Remark
TI702	⚠ 1-465-744-21	TUNER, VIF (BTF-2U601)	(UB MODEL)
TI702	⚠ 1-465-745-11	TUNER, VIF (BTF-2C401)	(VP MODEL)
TI702	⚠ 1-465-746-11	TUNER, VIF (BTF-2C402)	(AEP/CP MODEL)
TI702	⚠ 1-465-747-21	TUNER, VIF (BTF-2C403)	(EI MODEL)

< CRYSTAL >

Ref. No.	Part No.	Description	Remark
X501	1-578-774-11	VIBRATOR, CRYSTAL (12MHz)	

****

* A-6754-055-A MD-40 BOARD, COMPLETE
****
(Ref. No 7,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description			
C001	1-161-494-00	CERAMIC	0.022uF		25V
C002	1-161-494-00	CERAMIC	0.022uF		25V
C003	1-126-096-11	ELECT	10uF	20%	35V
C004	1-161-379-00	CERAMIC	0.01uF	20%	25V
C005	1-126-096-11	ELECT	10uF	20%	35V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MD-40

Ref. No.	Part No.	Description	Remark
C006	1-126-154-11	ELECT 47uF 20% 6.3V	
C008	1-164-159-11	CERAMIC 0.1uF 50V	
C009	1-164-159-11	CERAMIC 0.1uF 50V	
C013	1-164-159-11	CERAMIC 0.1uF 50V	
C014	1-164-159-11	CERAMIC 0.1uF 50V	
C015	1-164-159-11	CERAMIC 0.1uF 50V	
C016	1-126-096-11	ELECT 10uF 20% 35V	
C017	1-126-096-11	ELECT 10uF 20% 35V	
C018	1-126-096-11	ELECT 10uF 20% 35V	
C019	1-162-852-11	CERAMIC 0.15uF 10% 16V	
C020	1-162-851-11	CERAMIC 0.1uF 10% 16V	
C025	1-126-096-11	ELECT 10uF 20% 35V	
C026	1-126-096-11	ELECT 10uF 20% 35V	
C027	1-126-096-11	ELECT 10uF 20% 35V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN001	1-564-726-11	PIN HEADER, ANGLE 10P	
CN002	1-569-335-11	CONNECTOR, BOARD TO BOARD 9P	
CN003	1-569-334-11	CONNECTOR, BOARD TO BOARD 5P	
CN004	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P	
CN005	1-506-468-11	CONNECTOR 3P, MALE	
CN006	1-569-333-11	CONNECTOR, BOARD TO BOARD 3P	
CN007	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P	

< DIODE >

Ref. No.	Part No.	Description	Remark
D001	8-719-985-00	DIODE GL451VS1	
D004	8-719-109-97	DIODE RD6.8ES-B2	
D004	8-719-109-97	DIODE RD6.8ES-B2	
D005	8-719-109-97	DIODE RD6.8ES-B2	
D005	8-719-109-97	DIODE RD6.8ES-B2	

< IC >

Ref. No.	Part No.	Description	Remark
IC002	8-759-008-71	IC LM324N	
IC004	8-759-420-83	IC AN3814K	
IC005	8-759-008-72	IC LM393N	

< PHOTO INTERUPTER >

Ref. No.	Part No.	Description	Remark
PH001	8-759-144-33	PHOTO SENSOR PS6002	
PH002	8-759-144-33	PHOTO SENSOR PS6002	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q001	8-729-926-31	PHOTO TRANSISTOR PT483F1S	
Q002	8-729-926-31	PHOTO TRANSISTOR PT483F1S	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R001	1-249-423-11	CARBON 3.3K 5% 1/4W	
R002	1-249-423-11	CARBON 3.3K 5% 1/4W	
R003	1-249-426-11	CARBON 5.6K 5% 1/4W	
R004	1-249-426-11	CARBON 5.6K 5% 1/4W	
R005	1-249-420-11	CARBON 1.8K 5% 1/4W	
R006	1-249-441-11	CARBON 100K 5% 1/4W	
R007	1-249-441-11	CARBON 100K 5% 1/4W	
R008	1-249-425-11	CARBON 4.7K 5% 1/4W	
R009	1-249-409-11	CARBON 220 5% 1/4W	
R010	1-249-425-11	CARBON 4.7K 5% 1/4W	
R011	1-249-437-11	CARBON 47K 5% 1/4W	
R012	1-249-421-11	CARBON 2.2K 5% 1/4W	
R013	1-249-429-11	CARBON 10K 5% 1/4W	
R014	1-249-427-11	CARBON 6.8K 5% 1/4W	
R015	1-249-437-11	CARBON 47K 5% 1/4W	
R016	1-249-421-11	CARBON 2.2K 5% 1/4W	
R022	1-249-430-11	CARBON 12K 5% 1/4W	
R023	1-249-429-11	CARBON 10K 5% 1/4W	
R024	1-249-430-11	CARBON 12K 5% 1/4W	
R025	1-249-429-11	CARBON 10K 5% 1/4W	
R026	1-249-437-11	CARBON 47K 5% 1/4W	
R028	1-249-418-11	CARBON 1.2K 5% 1/4W	
R029	1-249-395-11	CARBON 15 5% 1/4W	
R030	1-249-395-11	CARBON 15 5% 1/4W	
R031	1-249-395-11	CARBON 15 5% 1/4W	
R032	⚠ 1-216-347-11	METAL OXIDE 0.68 5% 1W	F

< SWITCH >

Ref. No.	Part No.	Description	Remark
S001	1-570-953-11	SWITCH, PUSH (1 KEY) (CASSETTE UP/DOWN)	
S002	1-570-953-11	SWITCH, PUSH (1 KEY) (REC PRF)	

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The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
	* A-6721-407-A	MF-125 BOARD, COMPLETE	(AEP/EI MODEL)
		**********************	
	* A-6721-409-A	MF-125 BOARD, COMPLETE	(VP MODEL)
		**********************	
	* A-6721-410-A	MF-125 BOARD, COMPLETE	(CP MODEL)
		**********************	
	* A-6721-412-A	MF-125 BOARD, COMPLETE	(UB MODEL)
		**********************	
		(Ref.No 7,200 Series)	
	1-572-662-11	SWITCH, ROTARY	
	3-942-334-01	HOLDER, FL	

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C002	1-164-027-11	CERAMIC 22PF 5% 50V	
C003	1-164-027-11	CERAMIC 22PF 5% 50V	
C004	1-164-159-11	CERAMIC 0.1uF 50V	
C005	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C006	1-128-057-11	ELECT 330uF 20% 6.3V	
C007	1-125-486-11	DUBLE LAYERS 0.22F 5.5V	
C008	1-164-159-11	CERAMIC 0.1uF 50V	
C009	1-164-159-11	CERAMIC 0.1uF 50V	
C010	1-126-096-11	ELECT 10uF 20% 35V	
C011	1-161-327-00	CERAMIC 0.0033uF 30% 16V	
C012	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C013	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C014	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C015	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C016	1-161-379-00	CERAMIC 0.01uF 20% 25V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN001	1-569-342-11	CONNECTOR, BOARD TO BOARD 19P	
CN002	1-569-342-11	CONNECTOR, BOARD TO BOARD 19P	
CN003	1-562-631-11	SOCKET, CONNECTOR	
CN004	1-568-671-11	CONNECTOR, BOARD TO BOARD 11P	
CN005	1-580-850-11	CONNECTOR (DMS) 8P	

< DIODE >

Ref. No.	Part No.	Description	Remark
D001	8-719-974-59	DIODE 1SR139-100	
D002	8-719-974-59	DIODE 1SR139-100	
D003	8-719-110-08	DIODE RD8.2ES-B2	
D004	8-719-109-97	DIODE RD6.8ES-B2	
D005	8-719-109-97	DIODE RD6.8ES-B2	
D006	8-719-911-19	DIODE 1SS119	

< FILTER >

Ref. No.	Part No.	Description	Remark
FL001	1-519-668-11	INDICATION TUBE, FLUORESCENT	

< IC >

Ref. No.	Part No.	Description	Remark
IC001	8-752-817-88	IC CXP50116-225Q	
IC002	8-759-505-83	IC S-8054ALR-Z	
IC003	8-759-941-78	IC S-8053ALB	
IC004	8-759-501-99	IC ST93C46AB1	

< COIL >

Ref. No.	Part No.	Description	Remark
L001	1-410-522-11	INDUCTOR 120uH	
L002	1-410-522-11	INDUCTOR 120uH	
L003	1-410-522-11	INDUCTOR 120uH	
L004	1-410-522-11	INDUCTOR 120uH	
L005	1-410-363-31	INDUCTOR 27uH	
L006	1-410-363-31	INDUCTOR 27uH	
L007	1-410-331-31	INDUCTOR 33uH	
L008	1-410-331-31	INDUCTOR 33uH	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R001	1-249-429-11	CARBON 10K 5% 1/4W	
R002	1-247-895-00	CARBON 470K 5% 1/4W	
R003	1-249-423-11	CARBON 3.3K 5% 1/4W	
R004	1-249-429-11	CARBON 10K 5% 1/4W	
R005	1-249-429-11	CARBON 10K 5% 1/4W	
R006	1-249-429-11	CARBON 10K 5% 1/4W	
R007	1-249-429-11	CARBON 10K 5% 1/4W	
R008	1-249-425-11	CARBON 4.7K 5% 1/4W	
R009	1-249-425-11	CARBON 4.7K 5% 1/4W	
R010	1-249-425-11	CARBON 4.7K 5% 1/4W	
R011	1-249-425-11	CARBON 4.7K 5% 1/4W	
R012	1-249-425-11	CARBON 4.7K 5% 1/4W	
R013	1-249-425-11	CARBON 4.7K 5% 1/4W	
R014	1-249-425-11	CARBON 4.7K 5% 1/4W	
R015	1-249-425-11	CARBON 4.7K 5% 1/4W	
R016	1-249-419-11	CARBON 1.5K 5% 1/4W	
R018	1-247-419-11	CARBON 1.5K 5% 1/4W	(CP MODEL)
R018	1-247-427-11	CARBON 6.8K 5% 1/4W	(UB MODEL)
R018	1-247-431-11	CARBON 15K 5% 1/4W	(VP MODEL)
R019	1-249-419-11	CARBON 1.5K 5% 1/4W	
R020	1-249-420-11	CARBON 1.8K 5% 1/4W	
R021	1-249-429-11	CARBON 10K 5% 1/4W	
R022	1-249-419-11	CARBON 1.5K 5% 1/4W	
R023	1-249-420-11	CARBON 1.8K 5% 1/4W	
R025	1-249-417-11	CARBON 1K 5% 1/4W	
R028	1-249-425-11	CARBON 4.7K 5% 1/4W	
R029	1-249-429-11	CARBON 10K 5% 1/4W	
R030	1-249-429-11	CARBON 10K 5% 1/4W	
R031	1-249-429-11	CARBON 10K 5% 1/4W	
R032	1-249-429-11	CARBON 10K 5% 1/4W	
R033	1-249-420-11	CARBON 1.8K 5% 1/4W	
R034	1-216-378-11	METAL OXIDE 5.6 5% 2W	F
R050	1-249-437-11	CARBON 47K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S001	1-571-977-11	SWITCH, TACTIL (PAUSE ❚❚)	
S002	1-571-977-11	SWITCH, TACTIL (Hi-SPEED REWIND ◀◀◀)	
S003	1-571-977-11	SWITCH, TACTIL (RESET)	
		< CRYSTAL >	
X001	1-577-101-11	VIBRATOR, CERAMIC (4.19MHz)	
X002	1-567-098-00	VIBRATOR, CRYSTAL (32.768KHz)	

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Ref. No.	Part No.	Description	Remark
	* A-6754-283-A	MF-126 BOARD, COMPLETE (VP MODEL) *********************	
	* 1-639-194-11	MF-126 BOARD ************	
		< CAPACITOR >	
C051	1-164-159-11	CERAMIC 0.1uF 50V	
C052	1-161-379-00	CERAMIC 0.01uF 20% 25V	
		< CONNECTOR >	
CN051	1-568-665-11	CONNECTOR, BOARD TO BOARD 11P	
		< DIODE >	
D051	8-719-940-82	DIODE SLR-34MC3	
D052	8-719-940-82	DIODE SLR-34MC3	
D053	8-719-911-19	DIODE 1SS133T (UB MODEL)	
D054	8-719-940-99	DIODE SLV-34VC3 (UB MODEL)	
D055	8-719-940-99	DIODE SLV-34VC3 (UB MODEL)	
		< IC >	
IC051	1-466-131-21	IC GP1U52X	
		< RESISTOR >	
R051	1-249-401-11	CARBON 47 5% 1/4W	
R052	1-249-404-00	CARBON 82 5% 1/4W	(UB MODEL)
R053	1-249-405-11	CARBON 100 5% 1/4W	(UB MODEL)
R054	1-249-427-11	CARBON 6.8K 5% 1/4W	
R055	1-249-417-11	CARBON 1K 5% 1/4W	
R057	1-249-423-11	CARBON 3.3K 5% 1/4W	
		< VARIABLE RESISTOR >	
RV051	1-230-819-11	RES, VAR, CARBON 2K (SHARPNESS)	
		< SWITCH >	
S051	1-571-977-11	SWITCH, TACTIL (POWER)	
S052	1-571-977-11	SWITCH, TACTIL (EJECT)	
S054	1-570-865-11	SWITCH, SLIDE (COLOR PAL/MESECAM)	(VP MODEL)

Ref. No.	Part No.	Description	Remark
	* A-6726-326-A	PC-54 BOARD, COMPLETE ********************* (Ref.No 3,000 Series)	
	* 3-738-015-01	COVER, (DIA.6) CARBON VR (RV801)	
		< CAPACITOR >	
C201	1-162-839-11	CERAMIC 0.01uF 10% 16V	
C202	1-164-031-11	CERAMIC 33PF 5% 50V	
C203	1-102-824-00	CERAMIC 470PF 5% 50V	
C204	1-102-525-11	CERAMIC 68PF 5% 50V	
C205	1-162-839-11	CERAMIC 0.01uF 10% 16V	
C206	1-162-851-11	CERAMIC 0.1uF 10% 16V	
C207	1-124-234-00	ELECT 22uF 20% 16V	
C208	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C801	1-164-159-11	CERAMIC 0.1uF 50V	
C802	1-124-442-00	ELECT 330uF 20% 6.3V	
C803	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C804	1-164-159-11	CERAMIC 0.1uF 50V	
C805	1-161-494-00	CERAMIC 0.022uF 25V	
C806	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C807	1-164-096-11	CERAMIC 0.01uF 50V	
C808	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C809	1-102-978-00	CERAMIC 220PF 5% 50V	
C810	1-102-978-00	CERAMIC 220PF 5% 50V	
C811	1-164-031-11	CERAMIC 33PF 5% 50V	
C812	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C813	1-124-584-00	ELECT 100uF 20% 10V	
C814	1-124-584-00	ELECT 100uF 20% 10V	
C815	1-130-499-00	MYLAR 0.22uF 5% 50V	
C816	1-126-163-11	ELECT 4.7uF 20% 50V	
C817	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C818	1-161-061-11	CERAMIC 0.068uF 10% 50V	
C820	1-164-070-11	CERAMIC 100PF 5% 50V	
C821	1-164-159-11	CERAMIC 0.1uF 50V	
C823	1-124-927-11	ELECT 4.7uF 20% 100V	
C825	1-130-495-00	MYLAR 0.1uF 5% 50V	
C826	1-164-098-11	CERAMIC 0.047uF 12V	
C827	1-164-159-11	CERAMIC 0.1uF 50V	
C829	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C830	1-164-159-11	CERAMIC 0.1uF 50V	
C831	1-101-361-00	CERAMIC 150PF 5% 50V	
C832	1-124-903-11	ELECT 1uF 20% 50V	
C833	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C836	1-162-851-11	CERAMIC 0.1uF 10% 16V	
C837	1-164-052-11	CERAMIC 18PF 5% 50V	
C838	1-124-126-00	ELECT 47uF 20% 10V	
C840	1-164-096-11	CERAMIC 0.01uF 50V	
C841	1-164-096-11	CERAMIC 0.01uF 50V	

Ref. No.	Part No.	Description	Remark
C842	1-164-096-11	CERAMIC 0.01uF	50V
C848	1-164-096-11	CERAMIC 0.01uF	50V
C849	1-130-497-00	MYLAR 0.15uF 5%	50V
		< CONNECTOR >	
CN801	1-573-123-11	CONNECTOR, BOARD TO BOARD 15P	
		< DIODE >	
D801	8-719-911-19	DIODE 1SS119	
		< DELAY LINE >	
DL801	1-415-602-11	DELAY LINE, GLASS	
		< FILTER >	
FL801	1-239-915-11	FILTER, BAND PASS	
FL802	1-236-311-11	FILTER, BAND PASS	
FL803	1-527-849-00	FILTER, CERAMIC (13.3MHz)	
		< IC >	
IC801	8-759-320-78	IC HA118016NT	
		< COIL >	
L201	1-410-423-11	INDUCTOR 22uH	
L202	1-408-409-00	INDUCTOR 10uH	
L203	1-410-423-11	INDUCTOR 22uH	
L801	1-408-421-00	INDUCTOR 100uH	
L802	1-408-427-00	INDUCTOR 330uH	
L803	1-408-429-00	INDUCTOR 470uH	
L805	1-410-509-11	INDUCTOR 10uH	
L806	1-408-408-00	INDUCTOR 8.2uH	
L807	1-408-408-00	INDUCTOR 8.2uH	
L809	1-407-499-00	INDUCTOR 3.9mH	
		< TRANSISTOR >	
Q201	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q202	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q203	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q204	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q801	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q802	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q804	8-729-900-80	TRANSISTOR DTC114ES	
Q805	8-729-920-68	TRANSISTOR 2SA933S-QRT	
Q806	8-729-900-89	TRANSISTOR DTC144ES	
Q807	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q808	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q809	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q812	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q851	8-729-903-02	TRANSISTOR DTA143XS	

Ref. No.	Part No.	Description	Remark
Q852	8-729-900-89	TRANSISTOR DTC144ES	
		< RESISTOR >	
R201	1-249-431-11	CARBON 15K 5%	1/4W
R202	1-249-430-11	CARBON 12K 5%	1/4W
R203	1-249-417-11	CARBON 1K 5%	1/4W
R204	1-249-417-11	CARBON 1K 5%	1/4W
R205	1-249-418-11	CARBON 1.2K 5%	1/4W
R206	1-249-417-11	CARBON 1K 5%	1/4W
R207	1-247-897-11	CARBON 560K 5%	1/4W
R208	1-249-421-11	CARBON 2.2K 5%	1/4W
R209	1-249-428-11	CARBON 8.2K 5%	1/4W
R210	1-249-421-11	CARBON 2.2K 5%	1/4W
R211	1-249-412-11	CARBON 390 5%	1/4W
R212	1-249-407-11	CARBON 150 5%	1/4W
R213	1-249-437-11	CARBON 47K 5%	1/4W
R214	1-249-427-11	CARBON 6.8K 5%	1/4W
R215	1-249-435-11	CARBON 33K 5%	1/4W
R216	1-249-429-11	CARBON 10K 5%	1/4W
R217	1-249-405-11	CARBON 100 5%	1/4W
R228	1-217-666-91	CARBON 0 5%	1/4W
R229	1-217-666-91	CARBON 0 5%	1/4W
R801	1-249-417-11	CARBON 1K 5%	1/4W
R802	1-249-417-11	CARBON 1K 5%	1/4W
R803	1-249-413-11	CARBON 470 5%	1/4W
R804	1-249-417-11	CARBON 1K 5%	1/4W
R805	1-249-433-11	CARBON 22K 5%	1/4W
R806	1-249-435-11	CARBON 33K 5%	1/4W
R808	1-249-418-11	CARBON 1.2K 5%	1/4W
R809	1-249-417-11	CARBON 1K 5%	1/4W
R810	1-249-415-11	CARBON 680 5%	1/4W
R811	1-249-417-11	CARBON 1K 5%	1/4W
R812	1-249-423-11	CARBON 3.3K 5%	1/4W
R813	1-249-413-11	CARBON 470 5%	1/4W
R814	1-249-415-11	CARBON 680 5%	1/4W
R815	1-249-417-11	CARBON 1K 5%	1/4W
R816	1-249-441-11	CARBON 100K 5%	1/4W
R817	1-249-405-11	CARBON 100 5%	1/4W
R818	1-249-412-11	CARBON 390 5%	1/4W
R819	1-249-421-11	CARBON 2.2K 5%	1/4W
R820	1-249-427-11	CARBON 6.8K 5%	1/4W
R822	1-249-420-11	CARBON 1.8K 5%	1/4W
R823	1-249-423-11	CARBON 3.3K 5%	1/4W
R824	1-249-417-11	CARBON 1K 5%	1/4W
R825	1-249-427-11	CARBON 6.8K 5%	1/4W
R826	1-249-422-11	CARBON 2.7K 5%	1/4W
R827	1-249-424-11	CARBON 3.9K 5%	1/4W
R828	1-249-410-11	CARBON 270 5%	1/4W
R832	1-249-409-11	CARBON 220 5%	1/4W

Ref. No.	Part No.	Description			Remark
R833	1-249-411-11	CARBON	330	5%	1/4W
R834	1-249-422-11	CARBON	2.7K	5%	1/4W
R835	1-249-411-11	CARBON	330	5%	1/4W
R836	1-249-411-11	CARBON	330	5%	1/4W
R837	1-249-425-11	CARBON	4.7K	5%	1/4W
R838	1-249-437-11	CARBON	47K	5%	1/4W
R839	1-249-417-11	CARBON	1K	5%	1/4W
R850	1-249-429-11	CARBON	10K	5%	1/4W
R858	1-249-435-11	CARBON	33K	5%	1/4W

< VARIABLE RESISTOR >

RV801	1-238-012-11	RES, ADJ, CARBON 1K

< CRYSTAL >

X801	1-577-651-11	VIBRATOR, CRYSTAL (4.43MHz)

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* A-6727-327-A RP-100 BOARD, COMPLETE
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(Ref.No 1,000 Series)

* 3-746-014-01 CASE (MAIN), GRP
* 3-746-015-01 CASE (UPPER), GRP

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C001	1-162-839-11	CERAMIC	0.01uF	10%	16V
C002	1-124-465-00	ELECT	0.47uF	20%	50V
C003	1-124-465-00	ELECT	0.47uF	20%	50V
C004	1-164-031-11	CERAMIC	33PF	5%	50V
C005	1-164-031-11	CERAMIC	33PF	5%	50V
C006	1-124-465-00	ELECT	0.47uF	20%	50V
C007	1-124-465-00	ELECT	0.47uF	20%	50V
C008	1-162-306-11	CERAMIC	0.01uF	20%	16V
C009	1-162-306-11	CERAMIC	0.01uF	20%	16V
C010	1-124-465-00	ELECT	0.47uF	20%	50V
C012	1-164-027-11	CERAMIC	22PF	5%	50V
C013	1-164-031-11	CERAMIC	33PF	5%	50V
C014	1-124-465-00	ELECT	0.47uF	20%	50V
C015	1-124-465-00	ELECT	0.47uF	20%	50V
C016	1-162-839-11	CERAMIC	0.01uF	10%	16V
C017	1-162-306-11	CERAMIC	0.01uF	20%	16V
C018	1-126-154-11	ELECT	47uF	20%	6.3V
C019	1-162-306-11	CERAMIC	0.01uF	20%	16V
C020	1-126-154-11	ELECT	47uF	20%	6.3V
C021	1-161-375-00	CERAMIC	0.0022uF	20%	50V
C022	1-161-375-00	CERAMIC	0.0022uF	20%	50V
C023	1-162-839-11	CERAMIC	0.01uF	10%	16V
C024	1-124-463-00	ELECT	0.1uF	20%	50V
C025	1-162-839-11	CERAMIC	0.01uF	10%	16V
C026	1-162-306-11	CERAMIC	0.01uF	20%	16V
C027	1-164-027-11	CERAMIC	22PF	5%	50V
C028	1-162-839-11	CERAMIC	0.01uF	10%	16V
C029	1-162-839-11	CERAMIC	0.01uF	10%	16V
C030	1-164-023-11	CERAMIC	15PF	5%	50V
C031	1-162-839-11	CERAMIC	0.01uF	10%	16V
C032	1-164-033-11	CERAMIC	39PF	5%	50V
C033	1-162-839-11	CERAMIC	0.01uF	10%	16V
C034	1-102-973-00	CERAMIC	100PF	5%	50V
C035	1-102-525-11	CERAMIC	68PF	5%	50V
C036	1-102-820-00	CERAMIC	330PF	5%	50V
C037	1-162-839-11	CERAMIC	0.01uF	10%	16V
C038	1-126-154-11	ELECT	47uF	20%	6.3V
C039	1-162-839-11	CERAMIC	0.01uF	10%	16V
C040	1-162-839-11	CERAMIC	0.01uF	10%	16V
C041	1-162-839-11	CERAMIC	0.01uF	10%	16V
C042	1-162-839-11	CERAMIC	0.01uF	10%	16V

< CONNECTOR >

CN001	1-569-709-11	SOCKET, CONNECTOR 8P
CN002	* 1-564-030-00	PIN, CONNECTOR 5P
CN003	1-564-020-71	PIN, CONNECTOR 10P
CN004	1-506-489-11	CONNECTOR 10P, MALE

< DIODE >

D001	8-719-911-19	DIODE 1SS119
D002	8-719-911-19	DIODE 1SS119
D003	8-719-911-19	DIODE 1SS119

< IC >

IC001	8-759-320-52	IC HA118019NT

< COIL >

L001	1-407-169-XX	INDUCTOR 100uH
L002	1-407-169-XX	INDUCTOR 100uH
L003	1-408-975-21	INDUCTOR 27uH
L004	1-408-973-21	INDUCTOR 18uH
L005	1-408-977-21	INDUCTOR 39uH
L006	1-408-970-21	INDUCTOR 10uH
L007	1-408-973-21	INDUCTOR 18uH
L008	1-408-985-21	INDUCTOR 180uH
L009	1-407-169-XX	INDUCTOR 100uH

< TRANSISTOR >

Q002	8-729-920-68	TRANSISTOR 2SA933S-QRT
Q003	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q004	8-729-900-89	TRANSISTOR DTC144ES
Q005	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q006	8-729-900-89	TRANSISTOR DTC144ES

Ref. No.	Part No.	Description				Remark
Q007	8-729-900-89	TRANSISTOR DTC144ES				
		< RESISTOR >				
R001	1-249-404-00	CARBON	82	5%	1/4W	
R002	1-249-403-11	CARBON	68	5%	1/4W	
R003	1-249-404-00	CARBON	82	5%	1/4W	
R004	1-249-405-11	CARBON	100	5%	1/4W	
R005	1-249-429-11	CARBON	10K	5%	1/4W	
R007	1-249-429-11	CARBON	10K	5%	1/4W	
R008	1-249-429-11	CARBON	10K	5%	1/4W	
R009	1-247-891-00	CARBON	330K	5%	1/4W	
R010	1-249-420-11	CARBON	1.8K	5%	1/4W	
R011	1-247-895-00	CARBON	470K	5%	1/4W	
R012	1-249-433-11	CARBON	22K	5%	1/4W	
R013	1-249-432-11	CARBON	18K	5%	1/4W	
R014	1-249-417-11	CARBON	1K	5%	1/4W	
R016	1-249-417-11	CARBON	1K	5%	1/4W	
R017	1-249-421-11	CARBON	2.2K	5%	1/4W	
R018	1-249-421-11	CARBON	2.2K	5%	1/4W	
R019	1-249-412-11	CARBON	390	5%	1/4W	
R020	1-249-412-11	CARBON	390	5%	1/4W	
R021	1-249-416-11	CARBON	820	5%	1/4W	
R022	1-249-426-11	CARBON	5.6K	5%	1/4W	
R023	1-249-421-11	CARBON	2.2K	5%	1/4W	
R024	1-249-413-11	CARBON	470	5%	1/4W	
R025	1-249-415-11	CARBON	680	5%	1/4W	
R026	1-249-414-11	CARBON	560	5%	1/4W	
R027	1-249-416-11	CARBON	820	5%	1/4W	
R028	1-249-417-11	CARBON	1K	5%	1/4W	
R029	1-249-418-11	CARBON	1.2K	5%	1/4W	
R030	1-249-419-11	CARBON	1.5K	5%	1/4W	
R031	1-249-421-11	CARBON	2.2K	5%	1/4W	
R032	1-249-417-11	CARBON	1K	5%	1/4W	
R033	1-249-429-11	CARBON	10K	5%	1/4W	

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Ref. No.	Part No.	Description				Remark
	* A-6726-325-A	YP-11 BOARD, COMPLETE				
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		(Ref.No 2,000 Series)				
	* 3-738-015-01	COVER, (DIA. 6) CARBON VR (RV701)				
	* 3-738-015-01	COVER, (DIA. 6) CARBON VR (RV703)				
	* 3-738-015-01	COVER, (DIA. 6) CARBON VR (RV704)				
	* 3-738-015-01	COVER, (DIA. 6) CARBON VR (RV705)				
	* 3-738-015-01	COVER, (DIA. 6) CARBON VR (RV707)				
	* 3-738-015-01	COVER, (DIA. 6) CARBON VR (RV708)				
		< CAPACITOR >				
C701	1-164-092-11	CERAMIC	0.0033uF	10%	25V	
C702	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C703	1-126-163-11	ELECT	4.7uF	20%	50V	
C704	1-124-248-00	ELECT	22uF	20%	35V	
C705	1-164-159-11	CERAMIC	0.1uF		50V	
C706	1-126-163-11	ELECT	4.7uF	20%	50V	
C707	1-126-163-11	ELECT	4.7uF	20%	50V	
C708	1-164-046-11	CERAMIC	10PF	0.5PF	50V	
C709	1-124-443-00	ELECT	100uF	20%	10V	
C710	1-164-098-11	CERAMIC	0.047uF		12V	
C711	1-102-820-00	CERAMIC	330PF	5%	50V	
C712	1-102-822-00	CERAMIC	390PF	5%	50V	
C713	1-162-293-31	CERAMIC	820PF	10%	50V	
C714	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C715	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C718	1-124-927-11	ELECT	4.7uF	20%	100V	
C723	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C724	1-161-494-00	CERAMIC	0.022uF		25V	
C725	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C726	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C727	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C728	1-164-060-11	CERAMIC	39PF	5%	50V	
C730	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C731	1-124-443-00	ELECT	100uF	20%	10V	
C732	1-164-068-11	CERAMIC	82PF	5%	50V	
C733	1-164-058-11	CERAMIC	33PF	5%	50V	
C734	1-102-824-00	CERAMIC	470PF	5%	50V	
C735	1-164-159-11	CERAMIC	0.1uF		50V	
C736	1-164-066-11	CERAMIC	68PF	5%	50V	
C737	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C738	1-124-925-11	ELECT	2.2uF	20%	100V	
C739	1-164-072-11	CERAMIC	120PF	5%	50V	
C741	1-124-126-00	ELECT	47uF	20%	10V	
C743	1-162-851-11	CERAMIC	0.1uF	10%	16V	
C744	1-124-589-11	ELECT	47uF	20%	16V	
C746	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C747	1-164-159-11	CERAMIC	0.1uF		50V	

YP-11

Ref. No.	Part No.	Description			Remark
C749	1-164-159-11	CERAMIC	0. 1uF		50V
C750	1-161-379-00	CERAMIC	0. 01uF	20%	25V
C751	1-164-096-11	CERAMIC	0. 01uF		50V
C753	1-124-589-11	ELECT	47uF	20%	16V
C754	1-164-058-11	CERAMIC	33PF	5%	50V
C755	1-164-072-11	CERAMIC	120PF	5%	50V
C756	1-102-978-00	CERAMIC	220PF	5%	50V
C760	1-164-095-11	CERAMIC	0. 01uF	10%	16V
C763	1-124-927-11	ELECT	4. 7uF	20%	100V
C768	1-164-159-11	CERAMIC	0. 1uF		50V
C770	1-102-978-00	CERAMIC	220PF	5%	50V
C771	1-161-379-00	CERAMIC	0. 01uF	20%	25V
C780	1-164-159-11	CERAMIC	0. 1uF		50V
C782	1-164-068-11	CERAMIC	82PF	5%	50V
C783	1-102-820-00	CERAMIC	330PF	5%	50V
C785	1-164-095-11	CERAMIC	0. 01uF	10%	16V
C790	1-164-159-11	CERAMIC	0. 1uF		50V
C834	1-126-162-11	ELECT	3. 3uF	20%	50V
C860	1-126-157-11	ELECT	10uF	20%	16V
C867	1-162-286-31	CERAMIC	220PF	10%	50V
C898	1-164-159-11	CERAMIC	0. 1uF		50V

< CONNECTOR >

CN701	* 1-565-438-11	SOCKET, CONNECTOR (PCB) 10P	
CN702	* 1-565-346-11	SOCKET, CONNECTOR (PC BAORD) 7P	
CN703	1-573-124-11	CONNECTOR, BOARD TO BOARD 15P	
CN704	1-506-489-11	CONNECTOR 10P, MALE	

< DIODE >

D701	8-719-911-19	DIODE 1SS119	
D705	8-719-911-19	DIODE 1SS119	

< FILTER >

FL701	1-236-312-11	FILTER, BAND PASS	

< IC >

IC701	8-759-420-07	IC AN3231K	
IC702	8-752-321-89	IC CXL5003P	
IC802	8-759-822-05	IC LA7213	

< COIL >

Ref. No.	Part No.	Description	Remark
L701	1-408-421-00	INDUCTOR 100uH	
L704	1-408-420-00	INDUCTOR 82uH	
L705	1-408-422-00	INDUCTOR 120uH	
L706	1-410-521-11	INDUCTOR 100uH	
L707	1-408-421-00	INDUCTOR 100uH	
L708	1-410-521-11	INDUCTOR 100uH	
L709	1-408-421-00	INDUCTOR 100uH	
L712	1-408-410-00	INDUCTOR 12uH	
L713	1-408-413-00	INDUCTOR 22uH	
L726	1-408-424-00	INDUCTOR 180uH	
L892	1-408-409-00	INDUCTOR 10uH	

< TRANSISTOR >

Q702	8-729-920-68	TRANSISTOR	2SA933S-QRT	
Q704	8-729-900-89	TRANSISTOR	DTC144ES	
Q705	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q706	8-729-920-68	TRANSISTOR	2SA933S-QRT	
Q711	8-729-920-68	TRANSISTOR	2SA933S-QRT	
Q721	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q722	8-729-900-89	TRANSISTOR	DTC144ES	
Q723	8-729-900-89	TRANSISTOR	DTC144ES	
Q810	8-729-900-65	TRANSISTOR	DTA144ES	
Q883	8-729-119-78	TRANSISTOR	2SC2785-HFE	

< RESISTOR >

R701	1-247-891-00	CARBON	330K	5%	1/4W
R703	1-249-428-11	CARBON	8. 2K	5%	1/4W
R704	1-249-427-11	CARBON	6. 8K	5%	1/4W
R705	1-249-426-11	CARBON	5. 6K	5%	1/4W
R706	1-249-421-11	CARBON	2. 2K	5%	1/4W
R707	1-247-834-11	CARBON	1. 3K	5%	1/4W
R708	1-247-818-11	CARBON	300	5%	1/4W
R709	1-249-423-11	CARBON	3. 3K	5%	1/4W
R710	1-249-438-11	CARBON	56K	5%	1/4W
R712	1-249-425-11	CARBON	4. 7K	5%	1/4W
R713	1-249-421-11	CARBON	2. 2K	5%	1/4W
R717	1-249-420-11	CARBON	1. 8K	5%	1/4W
R718	1-249-422-11	CARBON	2. 7K	5%	1/4W
R719	1-249-426-11	CARBON	5. 6K	5%	1/4W
R720	1-249-424-11	CARBON	3. 9K	5%	1/4W
R722	1-249-419-11	CARBON	1. 5K	5%	1/4W
R723	1-249-426-11	CARBON	5. 6K	5%	1/4W
R724	1-249-419-11	CARBON	1. 5K	5%	1/4W
R725	1-249-412-11	CARBON	390	5%	1/4W
R726	1-249-416-11	CARBON	820	5%	1/4W
R727	1-249-421-11	CARBON	2. 2K	5%	1/4W
R728	1-247-897-11	CARBON	560K	5%	1/4W
R731	1-249-413-11	CARBON	470	5%	1/4W
R734	1-249-434-11	CARBON	27K	5%	1/4W
R735	1-249-429-11	CARBON	10K	5%	1/4W
R736	1-249-409-11	CARBON	220	5%	1/4W
R737	1-249-413-11	CARBON	470	5%	1/4W
R738	1-249-405-11	CARBON	100	5%	1/4W
R741	1-249-417-11	CARBON	1K	5%	1/4W
R742	1-249-417-11	CARBON	1K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R744	1-247-903-00	CARBON	1M	5%	1/4W
R754	1-249-412-11	CARBON	390	5%	1/4W
R755	1-259-880-11	CARBON	2.2M	5%	1/4W
R761	1-249-437-11	CARBON	47K	5%	1/4W
R763	1-249-423-11	CARBON	3.3K	5%	1/4W
R774	1-249-433-11	CARBON	22K	5%	1/4W
R775	1-249-435-11	CARBON	33K	5%	1/4W
R776	1-249-410-11	CARBON	270	5%	1/4W
R777	1-249-417-11	CARBON	1K	5%	1/4W
R778	1-249-418-11	CARBON	1.2K	5%	1/4W
R779	1-249-413-11	CARBON	470	5%	1/4W
R780	1-249-429-11	CARBON	10K	5%	1/4W
R781	1-249-427-11	CARBON	6.8K	5%	1/4W
R855	1-249-411-11	CARBON	330	5%	1/4W
R856	1-247-887-00	CARBON	220K	5%	1/4W
R857	1-249-417-11	CARBON	1K	5%	1/4W
R859	1-249-429-11	CARBON	10K	5%	1/4W
R892	1-249-429-11	CARBON	10K	5%	1/4W
R893	1-249-417-11	CARBON	1K	5%	1/4W

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description
RV701	1-238-015-11	RES. ADJ. CARBON 4.7K
RV702	1-238-015-11	RES. ADJ. CARBON 4.7K
RV703	1-238-016-11	RES. ADJ. CARBON 10K
RV704	1-238-017-11	RES. ADJ. CARBON 22K
RV705	1-238-017-11	RES. ADJ. CARBON 22K
RV707	1-238-012-11	RES. ADJ. CARBON 1K
RV708	1-238-016-11	RES. ADJ. CARBON 10K
RV710	1-238-544-11	RES. ADJ. CARBON 1K

* * *

MISCELLANEOUS

Ref. No.		Part No.	Description
13		1-466-515-11	SWITCH BLOCK, CONTROL (AEP/UB/EI MODEL)
13		1-466-515-21	SWITCH BLOCK, CONTROL (VP MODEL)
13		1-466-515-71	SWITCH BLOCK, CONTROL (CP MODEL)
27		1-465-739-11	**REMOTE COMMANDER (RMT-V103) (EXCEPT CP MODEL)**
27		1-465-724-31	**REMOTE COMMANDER (RMT-V104A) (CP MODEL)**
54	⚠	1-413-635-11	SWITCHING BLOCK (UB MODEL)
54	⚠	1-413-636-11	SWITCHING BLOCK (VP/EI MODEL)
54	⚠	1-413-637-11	SWITCHING BLOCK (AEP/CP MODEL)
260		1-543-647-11	HEAD, FE
264		1-550-655-11	UPPER DRUM ASSY (DZR-32-R)
328	*	1-633-460-11	PC BOAD, CA-41
D001		8-719-985-00	DIODE GL451VS1 (LED)
M901		1-550-656-11	LOWER DRUM ASSY (DZL-32A-R)
M902		8-835-394-01	MOTOR, DC U-26F (CAPSTAN)
M903		X-3733-302-1	MOTOR ASSY, CAM
M904		X-3727-784-1	MOTOR ASSY (CASSETTE LOADING)

Ref. No.		Part No.	Description	Remark
PC001		1-558-924-21	CABLE, PIN	
Q001		8-729-926-31	PHOTO TRANSISTOR PT483F1S	
Q002		8-729-926-31	PHOTO TRANSISTOR PT483F1S	
RF201	⚠	1-466-328-11	MODULATOR, RF (RFU-2017) (AEP/VP/CP MODEL)	
RF201	⚠	1-466-347-11	MODULATOR, RF (RFU-2024) (UB/EI MODEL)	
S001		1-571-920-11	SWITCH, ROTARY	
T1702		1-465-744-21	TUNER, VIF (BTF-2U601) (UB MODEL)	
T1702	⚠	1-465-745-11	TUNER, VIF (BTF-2C401) (VP MODEL)	
T1702	⚠	1-465-746-11	TUNER, VIF (BTF-2C402) (AEP/CP MODEL)	
T1702	⚠	1-465-747-21	TUNER, VIF (BTF-2C403) (EI MODEL)	

* * *

ACCESSORY & PACKING MATERIAL

	Part No.	Description
	1-551-513-00	CORD, CONNECTION (PAL) (AEP/VP MODEL)
	1-574-056-11	CORD, POWER (VP MODEL)
	1-575-131-11	CORD, POWER (AEP/CP/EI MODEL)
	1-590-866-11	CORD, POWER (UB MODEL)
*	3-744-232-01	CUSHION (UPPER)
*	3-744-233-01	CUSHION (LOWER)
	3-753-157-41	MANUAL, INSTRUCTION (AEP MODEL) (SWEDISH/ITALIAN)
	3-753-157-61	MANUAL INSTRUCTION (AEP MODEL) (DANISH/FINNISH)
	3-753-202-11	MANUAL INSTRUCTION (UB, EI) (ENGLISH)
	3-753-202-51	MANUAL INSTRUCTION (VP MODEL) (GERMAN/FRENCH/DATCH/ITALIAN)
	3-753-202-71	MANUAL INSTRUCTION (CP MODEL) (SPANISH/PORTUGUESE)
*	3-942-335-01	INDIVIDUAL CARTON

* * *

HARDWARE LIST

Ref. No.	Part No.	Description
# 1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3
# 2	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3
# 3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3
# 4	7-627-552-08	SCREW, PRECISION +P 1.7X2.5
# 5	7-682-645-01	SCREW +PS 3X4
# 6	7-621-732-08	SET-SCT, HEX. 2X3 FLAT POINT
# 7	7-682-547-04	SCREW +P 3X6
# 8	7-682-548-04	SCREW +P 3X8
# 9	7-628-254-00	SCREW +PS 2.6X5
#10	7-624-102-04	STOP RING 1.5, TYPE -E

* * *

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

SECTION 7
ELECTRICAL ADJUSTMENTS

During the adjustment, see the Parts Arrangement Diagram relevant to the adjustment on page 150.

7-1. PRE-ADJUSTMENT PREPARATIONS

Necessary items and indications for total adjustment of electric circuit of this machine will be described in this chapter.

7-1-1. Instruments to be Used

1) Color TV
2) Oscilloscope 1 or 2 phenomena, band more than 15 MHz, delay mode, as provided.
3) Frequency counter (min, 8 digits)
4) PAL pattern generator
5) Digital voltmeter
6) Audio level meter
7) Audio generator
8) Attenuator
9) Distortion factor meter
10) Alignment tape
    Part code: H7099052H (MH-2)
11) Extention cable for YP-11 board.
    10P 2 mm pitch Part code:
    7P 2 mm pitch Part code:

7-1-2. Connection

Unless otherwise specified, connect and adjust the measuring instruments as shown in the following diagram.

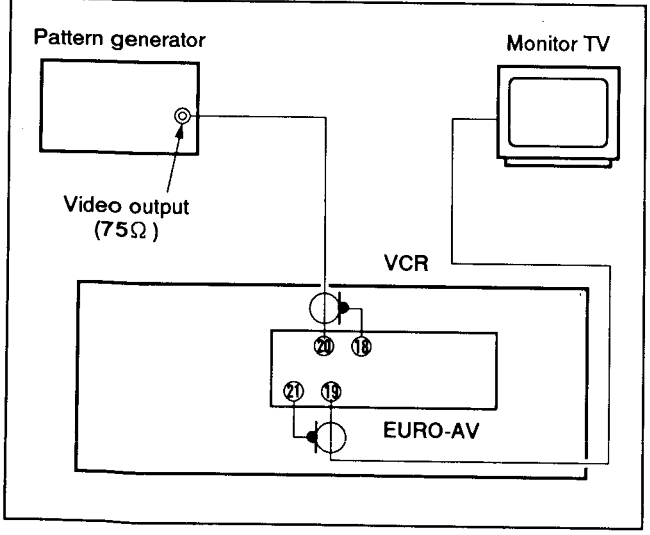

Pattern generator
Monitor TV
Video output
(75Ω)
VCR
⑳
⑱
㉑
⑲
EURO-AV

Fig. 7-1.

7-1-3. Setup for Adjustment

In this adjustment, PAL pattern generator is connected with Pin ⑳ of EURO-AV connector. When check to tuner, connected AERIAL terminal. Check that the amplitudes of video signal SYNC signal, of picture portions, and of burst signals are flat at approximately 0.3, 0.7 and 0.3V, respectively, and that the level ratio of the burst signal and "red" signal are 0.30:0.66. Fig. 7-2. shows video signals (color bars) used in adjusting the video section.

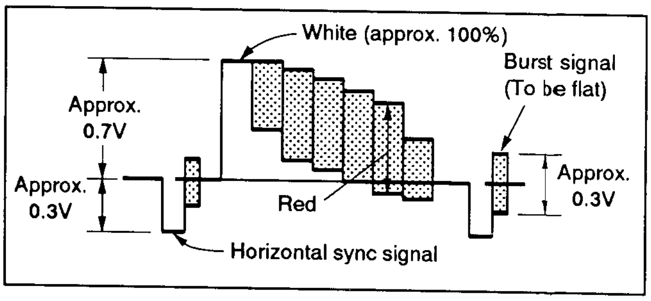

White (approx. 100%)
Burst signal
(To be flat)
Approx.
0.7V
Approx.
0.3V
Red
Approx.
0.3V
Horizontal sync signal

Fig. 7-2.

7-1-4. Alignment Tape (MH-2)

	Time	Video signal	Audio signal
1	10 min	Stair-step	6 kHz
2	5 min	———	3 kHz
3	10 min	Color bar	1 kHz
4	3 min	RF sweep	———

Table 7-1.

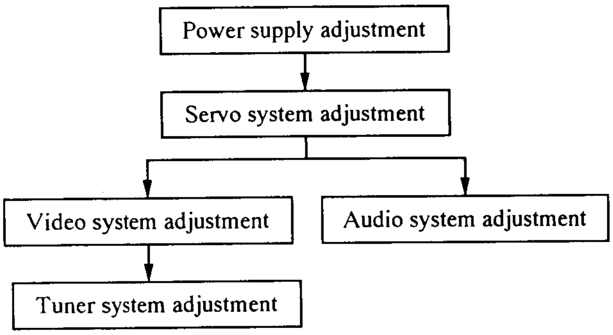
7-1-5. Specified I/O Level and Impedance

Input/output terminal

Video inputs	EURO-AV: 21-pin (Pin ⑳) 1 Vp-p, 75Ω , unbalanced, sync negative
Audio inputs	EURO-AV: 21-pin (Pin ② and ⑥) More than 10 kΩ , –4 dBs
Video outputs	EURO-AV: 21-pin (Pin ⑲) 1 Vp-p, 75Ω , unbalanced sync negative
Audio outputs	EURO-AV: 21-pin (Pins ① and ③) Output impedance: less than 1 kΩ –4 dBs with 10 kΩ load

7-1-6. Adjusting Sequence

Make the electrical adjustment in the following sequence.


Power supply adjustment
Servo system adjustment
Video system adjustment
Audio system adjustment
Tuner system adjustment

7-2. POWER SUPPLY ADJUSTMENT

7-2-1. UNSW 12V Adjustment (Power Block)

Mode	E-E
Measurement Point	Pin ⑥ of CN712
Measuring Instrument	Digital voltmeter
Adjusting Element	RV201
Specified Value	12.0 ± 0.1 Vdc

Adjusting method:

1) With RV201, adjust the voltage to 12.0 ± 0.1 Vdc.

7-2-2. Power Supply Check (Power Block)

Mode	E-E
Measuring instrument	Digital voltmeter
UNSW 5.8V check	
Measurement point	Pin ④ of CN711
Specified value	5.8 ± 0.25 Vdc
DC –30V check	
Measurement point	Pin ⑦ of CN712
Specified value	–27.0 ± 2.5 Vdc
DC +35V check	
Measurement point	Pin ③ of CN711
Specified value	37.0 ± 3.0 Vdc
SW 5V check	
Measurement point	Pin ⑥ of CN711
Specified value	5.0 ± 0.2 Vdc
SW 9V check	
Measurement point	Pin ⑦ of CN711
Specified value	9.0 ± 0.3 Vdc
MTR 12V check	
Measurement point	Pin ③ of CN712
Specified value	12.3 ± 0.3 Vdc
DC 2.5V check	
Measurement point	+ : Pin ⑧ of CN712 – : Pin ⑨ of CN712
Specified value	2.4 ± 0.2V

Checking method:

1) Confirm that each voltage meets its specified value.

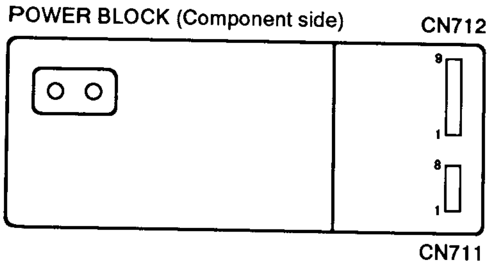

POWER BLOCK (Component side)
CN712
9
1
8
1
CN711

Fig. 7-3.

7-3. SERVO SYSTEM ADJUSTMENT

7-3-1. Switching Position Adjustment (MA-88 Board)

Mode	PB
Signal	Alignment tape: SP stair-step section
Measurement Point	CH1: Pin ⑲ of CN201 (EURO-AV) CH2: Pin ⑦ of CN903 (RF SWP)
Measuring Instrument	Oscilloscope
Adjusting Element	RV501
Specified Value	6.5 ± 0.5H (410 ± 30 μsec)

Adjusting method:

1) Set to PB mode and press both buttons of tracking control to set it to the center.
2) With RV501, adjust the switching position to 6.5 ± 0.5H (410 ± 30 μsec).

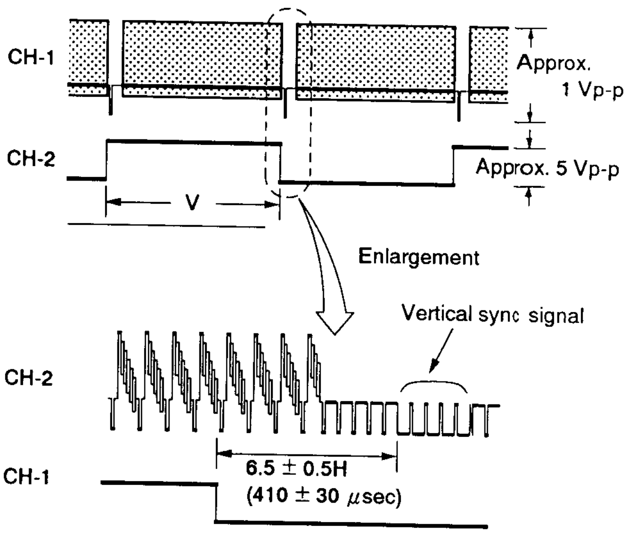

CH-1
Approx. 1 Vp-p
CH-2
Approx. 5 Vp-p
V
Enlargement
Vertical sync signal
CH-2
CH-1
6.5 ± 0.5H
(410 ± 30 μsec)

Fig. 7-4.

7-4. VIDEO SYSTEM ADJUSTMENTS

When adjusting YP-11 and PC-54 boards, use the extention cable.

Adjust the video system in the following sequence as a rule. The color video signal supplied from the pattern generator is used as a video input signal for video system adjustment in the recording mode.
Make sure that sync and color burst signals meet requirements specified at setup of adjustment shown in Fig. 7-2.

[Adjusting sequence]

7-4-1. Playback Y Signal Level Adjustment
7-4-2. Y Signal NR Level Adjustment
7-4-3. Sync AGC Adjustment
7-4-4. Sync Tip Carrier Set and Deviation Adjustment
7-4-5. White Clip, Dark Clip Adjustment
7-4-6. Recording Y Signal Level Adjustment
7-4-7. Recording Chroma Level Adjustment
7-4-8. Character generator AFC adjustment

7-4-1. Playback Y Signal Level Adjustment (YP-11 Board)

Mode	PB
Signal	Alignment tape: SP color bar section
Measurement Point	EURO-AV connector (Pin ⑲ of CN201)
Measuring Instrument	Oscilloscope
Adjusting Element	RV708
Specified Value	1.00 ± 0.05 Vp-p

Note: 1) Make this adjustment with the EDIT ON/OFF button set to off.
2) Pin ⑲ of CN201 must be terminated at 75Ω ± 1%.

Adjusting method:

1) With RV708, adjust the VIDEO signal level to 1.00 ± 0.05 Vp-p.

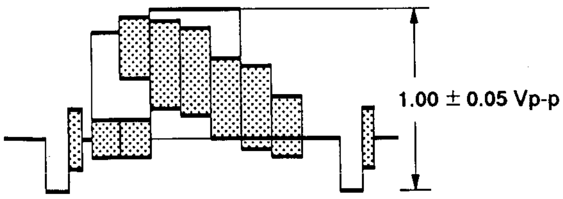


Fig. 7-5.

7-4-2. Y Signal NR Level Adjustment (YP-11 Board)

Mode	PB
Signal	Alignment tape: SP color bar section
Measurement Point	Pin ⑩ of IC701
Measuring Instrument	Oscilloscope
Adjusting Element	RV707
Specified Value	Less than 150 mVp-p

Adjusting method:

1) Adjust to eliminate level differences for each H step with RV707.

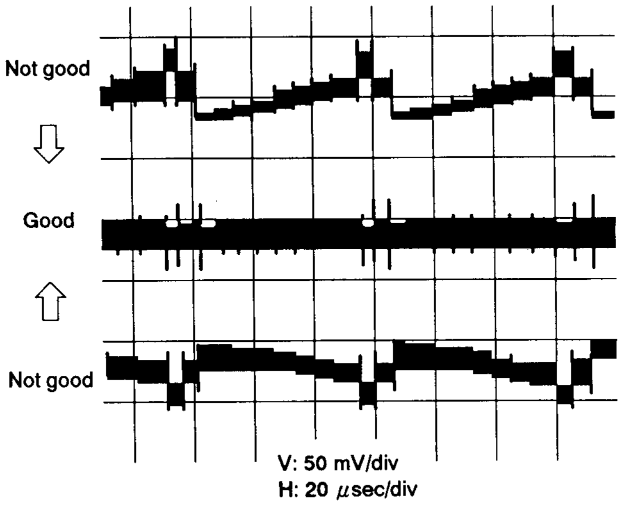


Fig. 7-6.

7-4-3. Sync AGC Adjustment (YP-11 Board)

Mode	E-E
Signal	Color bar
Measurement Point	EURO-AV connector (Pin ⑲ of CN201)
Measuring Instrument	Oscilloscope
Adjusting Element	RV701
Specified Value	1.00 ± 0.05 Vp-p

Note: Pin ⑲ of CN201 must be terminates at 75Ω .

Adjusting method:

1) With RV701, adjust the VIDEO signal level to 1.00 ± 0.05 Vp-p.

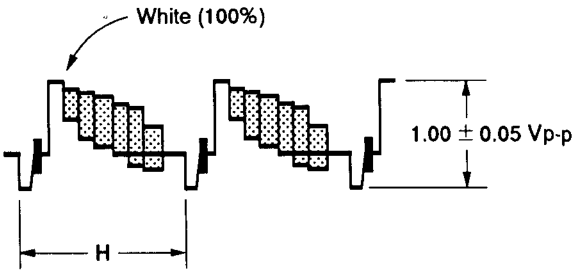


Fig. 7-7. SYNC AGC adjustment

7-4-4. Sync Tip Carrier Set and Deviation Adjustment (YP-11 Board)

Before starting the adjustment, be sure to check that recording Y signal level adjustment has been completed.

Sync tip carrier set	
Mode	E-E
Signal	No signal (Note 2)
Measurement Point	Pin ㉔ of IC701
Measuring Instrument	Frequency counter
Adjusting Element	RV703
Specified Value	3.80 ± 0.05 MHz
Deviation adjustment	
Mode	REC and PB
Signal	Color bar
Measurement Point	EURO-AV connector (Pin ⑲ of CN201)
Measuring Instrument	Oscilloscope
Adjusting Element	RV702
Specified Value	1.00 ± 0.05 Vp-p

Note: Pin ⑲ of CN201 must be terminated at 75Ω .

Adjusting method:

1) Make a no signal state and select the E-E made.
2) Connect the frequency counter to the Pin ㉔ of IC701 and adjust to 3.80 ± 0.05 MHz with RV703.
3) Input the color bar signal to make recording.
4) Playback the recorded tape portion and check that the playback Y signal level is 1.00 ± 0.05 Vp-p.

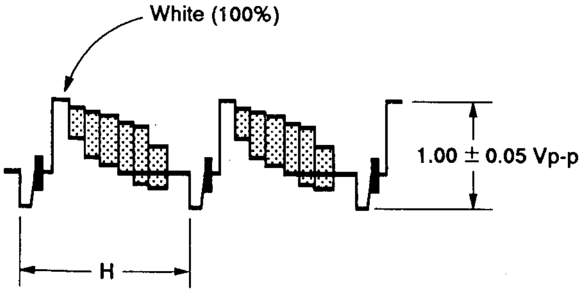


Fig. 7-8. Deviation adjustment

5) When the specified value is not met, input the color bar signal to select the E-E mode. Adjust RV702 to correct a playback Y signal level error, and then, repeat the steps 1) through 4) above.

7-4-5. White Clip and Dark Clip Adjustments (YP-11 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ⑳ of IC701
Measuring Instrument	Oscilloscope
Adjusting Element	White clip: RV705 Dark clip: RV704
Specified Value	White clip: 185^{+5}_{-10} % Dark clip: 45^{+5}_{-10} %

Adjusting method:

1) With RV705, adjust the white clip level to 185^{+5}_{-10}% of the white level (100%).
2) With RV704, adjust the dark clip level to 45^{+5}_{-10}% of the white level (100%).

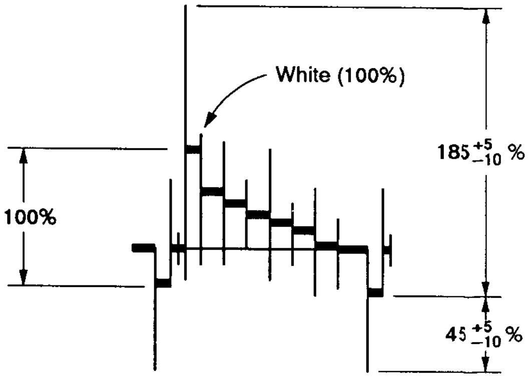


Fig. 7-9.

7-4-6. Recording Y Signal Level Adjustment (YP-11 Board/RP-100 Board)

Mode	REC
Signal	No signal
Measurement Point	Pin ② of CN002 (RP-100board)
Measuring Instrument	Oscilloscope
Adjusting Element	RV710 (YP-11 board)
Specified Value	2.2 ± 0.1 Vp-p

Adjusting method:

1) With RV710, adjust the Y REC RF signal level to 2.2 ± 0.1 Vp-p.

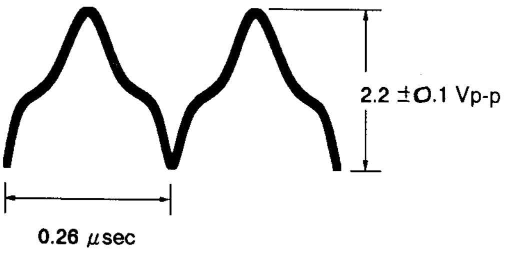


Fig. 7-10.

7-4-7. Recording Chroma Level Adjustment (PC-54 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ① of CN801
Measuring Instrument	Oscilloscope
Adjusting Element	RV801
Specified Value	165 ± 10 mVp-p

Adjusting method:

1) Adjust RV801 so that the red chroma signal level became 165 ± 10 mVp-p.

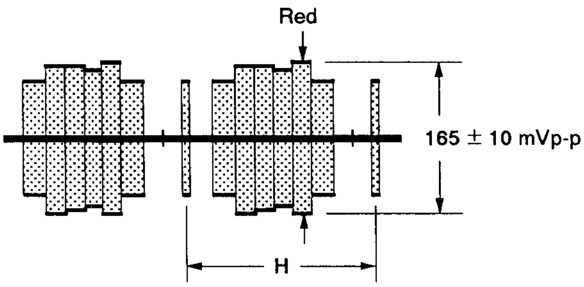


Fig. 7-11.

7-4-8. Character Generator AFC Adjustment (CV-22 Board)

Mode	E-E
Signal	No signal
Measurement Point	Pin ② of IC490
Measuring Instrument	Oscilloscope
Adjusting Element	RV491
Specified Value	15600 ± 200 Hz

Connection:

1) Connect R490 and GND with a jumper wire.

Adjusting method:

1) Adjust RV491 so that the oscillation frequency is 15600 ± 200 Hz.

7-5. AUDIO SYSTEM ADJUSTMENT

- Use a normal VHS cassette for an adjustment tape.
- Make adjustment with the switches set to the following positions.
  INPUT SELECT......LINE

[Connection]

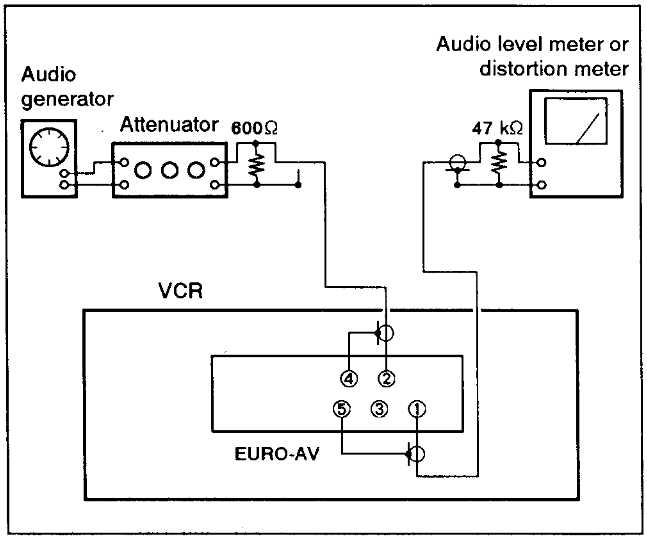


Fig. 7-12.

[Adjusting sequence]

1. ACE head adjustment......See Mechanism Block Adjustment
2. E-E output level check
3. Recording bias adjustment
4. Overall level characteristic and distortion factor check
5. Overall S/N check

1. ACE head adjustment

See "Mechanism Block Adjustment".

2. E-E output level check

Mode	E-E
Signal	400 Hz, –4 dBs
Measurement Point	EURO-AV connector (Pin ① of CN201)
Adjusting Element	Audio level meter
Specified Value	–4 ± 2 dBs

Confirming method:

1) Input a signal of 400 Hz, –4 dBs to the audio input terminal of EURO-AV connector (Pin ② of CN201).
2) Confirm that the audio output level is –4 ± 2 dBs.

3. Recording bias adjustment (MA-88 board)

Mode	REC and PB
Signal	400 Hz, -27.5 dBs 7 kHz, -27.5 dBs
Measurement Point	EURO-AV connector (Pin ① of CN201)
Measuring Instrument	Audio level meter
Adjusting Element	RV301
Specified Value	0 ± 1 dB

Connection:
1) Connect Pin ⑫ of IC301 and GND with 470Ω resistor.
2) Connect Pin ⑫ and ㉛ of IC301 with 10 kΩ resistor.

Adjusting method:
1) Supply a signal of 400 Hz, –27.5 dBs to the audio input terminal of EURO-AV connector (Pin ② of CN201).
2) Connect the audio level meter to the audio output terminal of EURO-AV connector (Pin ① of CN201).
3) Adjust the attenuator so that the audio level meter will indicate –27.5 dBs.
4) Make recording.
5) Set an audio line input signal to 7 kHz and make recording.
6) Playback a recorded portion, and measure output levels at 400 Hz and 7 kHz.
7) Confirm that the 7 kHz playback output levels within a range of the 400 Hz playback output level 0 ± 1 dB. When beyond this range, adjust RV301 and repeat the steps 1) through 7) above.

4. Overall level characteristic and distortion factor check

Mode	REC and PB
Signal	400 Hz, –4 dBs
Measurement Point	EURO-AV connector (Pin ① of CN201)
Measuring Instrument	Audio level meter and distortion factor gauge
Specified Value	Playback level: –4 ± 2 dBs Distortion factor: 4% or less

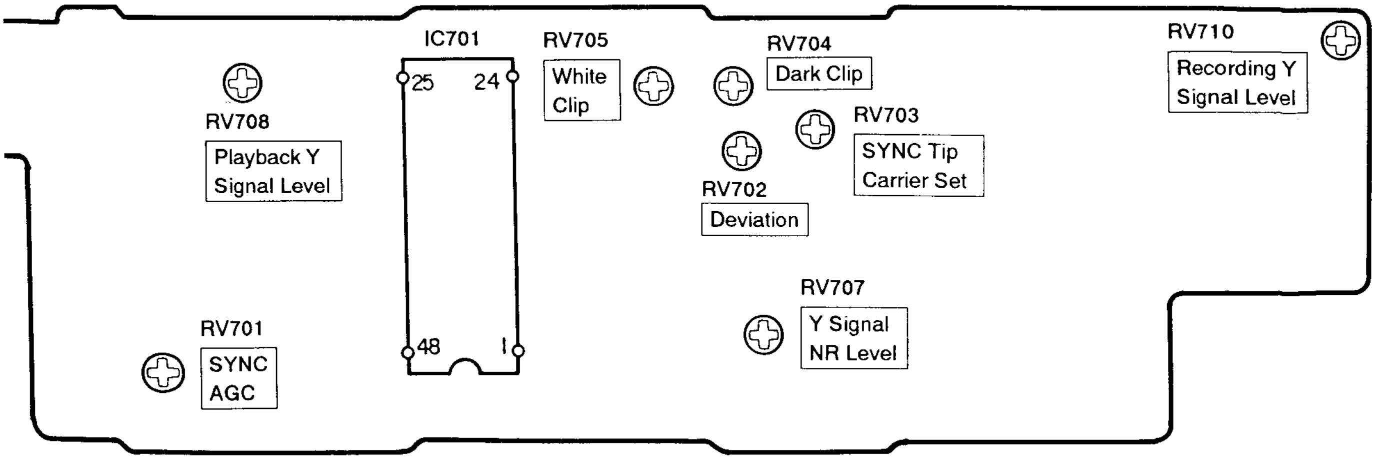
Confirming method:
1) Supply an audio signal of 400 Hz, –4 dBs to the audio input terminal of EURO-AV connector (Pin ② of CN201).
2) Make recording.
3) Playback a recorded portion.
4) Confirm that a playback level is –4 ± 2 dBs.
5) Confirm that a distortion factor is within 4%.

5. Overall S/N check

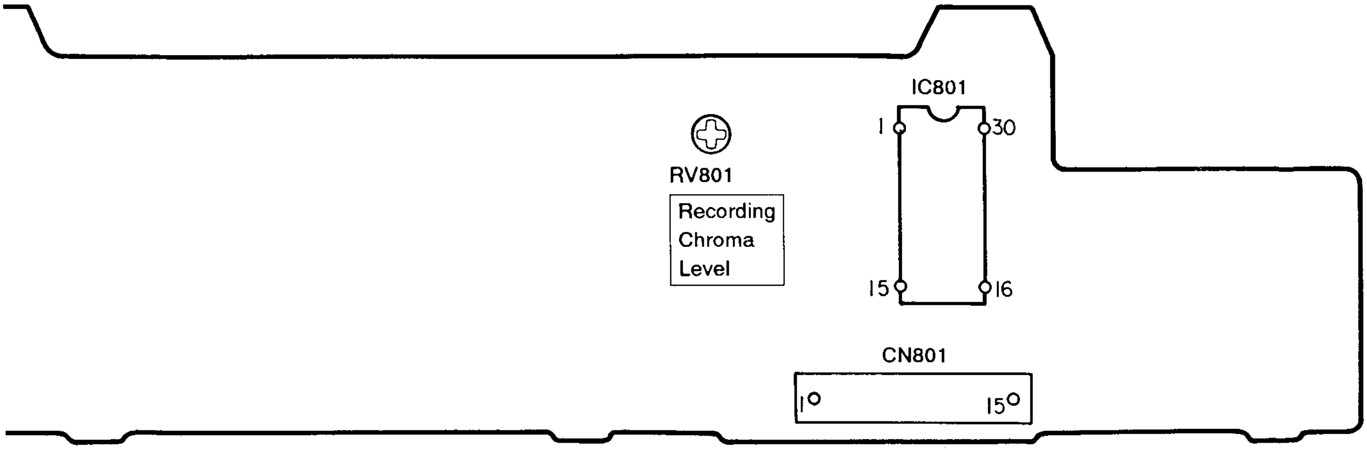
Mode	REC and PB
Signal	400 Hz, –4 dBs, and no signal
Measurement Point	EURO-AV connector (Pin ① of CN201)
Measuring Instrument	Audio level meter
Specified Value	38 dB or more

Confirming method:
1) Supply a signal of 400 Hz, –4 dBs to the audio input terminal of EURO-AV connector (Pin ② of CN201).
2) Make recording.
3) With the REC mode held, make the no signal state. (Connect Pin ② of CN201 and GND with a jumper wire.)
4) Playback a recorded portion, and confirm that there is a level difference of 38 dB or more between 400 Hz portion and no signal portion (immediately after a 400 Hz signal).

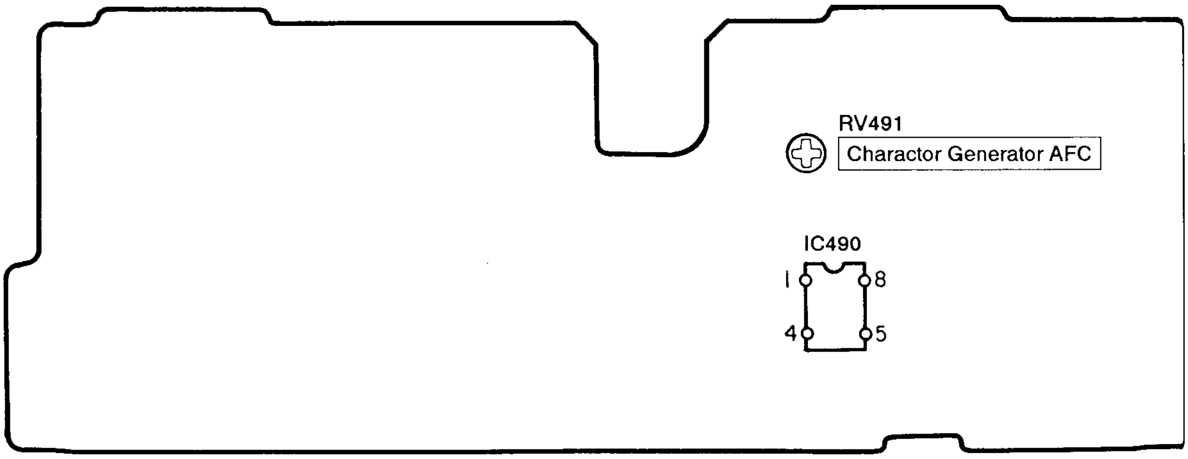
YP-11 BOARD (COMPONENT SIDE)


IC701
25
24
48
1
RV705
White Clip
RV704
Dark Clip
RV710
Recording Y Signal Level
RV708
Playback Y Signal Level
RV703
SYNC Tip Carrier Set
RV702
Deviation
RV707
Y Signal NR Level
RV701
SYNC AGC

PC-54 BOARD (COMPONENT SIDE)


IC801
1
30
15
16
RV801
Recording Chroma Level
CN801
1
15

CV-22 BOARD (COMPONENT SIDE)


RV491
Charactor Generator AFC
IC490
1
8
4
5